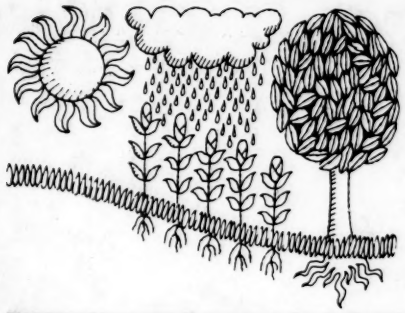


WEEKLY WEATHER AND CROP BULLETIN

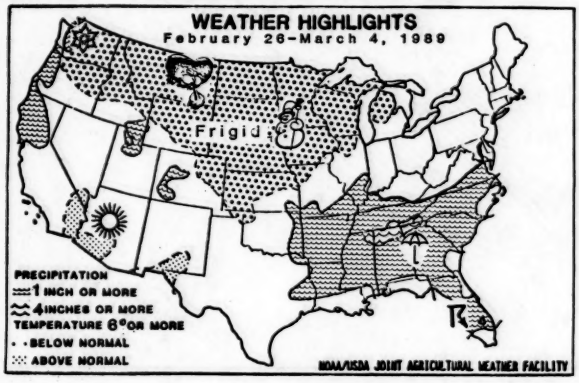
U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration, National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service and World Agricultural Outlook Board

Volume 76, No. 9 | Washington, D.C. | Mar 7, 1989

National Weather Summary

February 26 to March 4, 1989



HIGHLIGHTS: The central Plains received much needed light to moderate snow early in the week. A slow moving cold front brought persistent rains to the Gulf Coast States for several days while also triggering thunderstorms across Florida. A major, late-season winter storm came ashore in the Pacific Northwest on Wednesday and spent the rest of the week spreading winter weather across most of the Northern United States and even into the south-central Plains. California did not even escape the storm's wrath as heavy rain and high winds buffeted the Golden State. This storm also triggered severe thunderstorms in the lower Mississippi Valley and freezing rainfall throughout the mid-section of the country. Localized flooding was reported in portions of the Southeast. Frigid temperatures behind the storm sent temperatures below zero throughout the northern Plains.

SUNDAY: The cold snap subsided across Florida with low temperatures reaching only the mid-thirties. An upper air disturbance produced snow from eastern Nebraska and Kansas across Missouri and western Kentucky and rain throughout Arkansas and the Tennessee Valley. Snow accumulations were 2-5 inches in Nebraska and Kansas. Meanwhile, snow fell across the eastern Great Lakes, Mid-Atlantic, and New England States.

MONDAY: Upper air disturbances continued to bring snow over Kentucky and Tennessee, while also producing freezing rain over the south-central Plains and showers and thunderstorms over the lower Mississippi Valley. Moderate snow fell across the mountains of North Carolina, with rain falling in the lower elevations and across Virginia. Light snow occurred across the northern Rockies. Dry weather was prevalent throughout the Southwest.

INSIDE: U.S. February Weather and Crop Summary

TUESDAY: Showers and thunderstorms occurred from the central Gulf Coast to North Carolina from a slow moving cold front. Severe thunderstorms were reported in the Southeast, with reports of locally heavy rains. Mixed precipitation fell across North Carolina and Virginia. Lake-effect snow produced 2-4 inches across the Great Lakes.

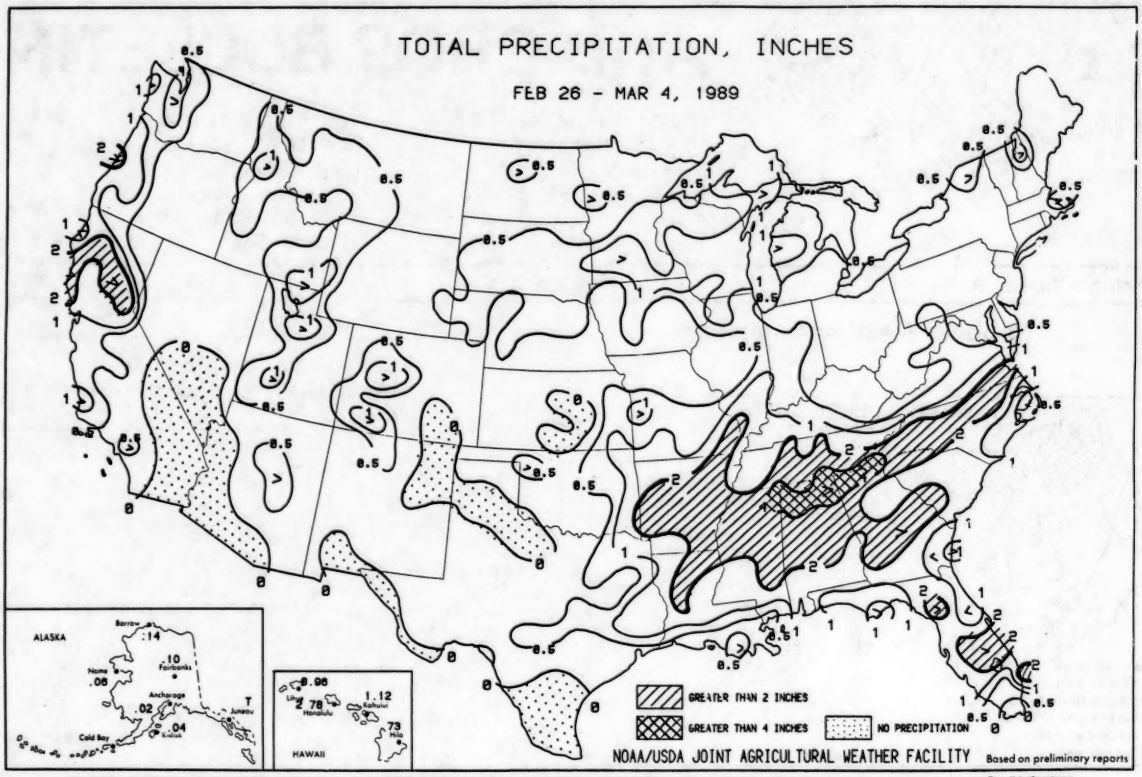
WEDNESDAY: The slow moving cold front continued to bring rain to the Gulf Coast and Southern Atlantic Coast States, with some thunderstorms in northern Florida. A storm system in the Pacific Northwest triggered heavy rain and snow along with strong winds throughout that region and California. Frigid temperatures chilled the northern Plains with lows below zero. Light snow was common across the Midwest and Great Plains.

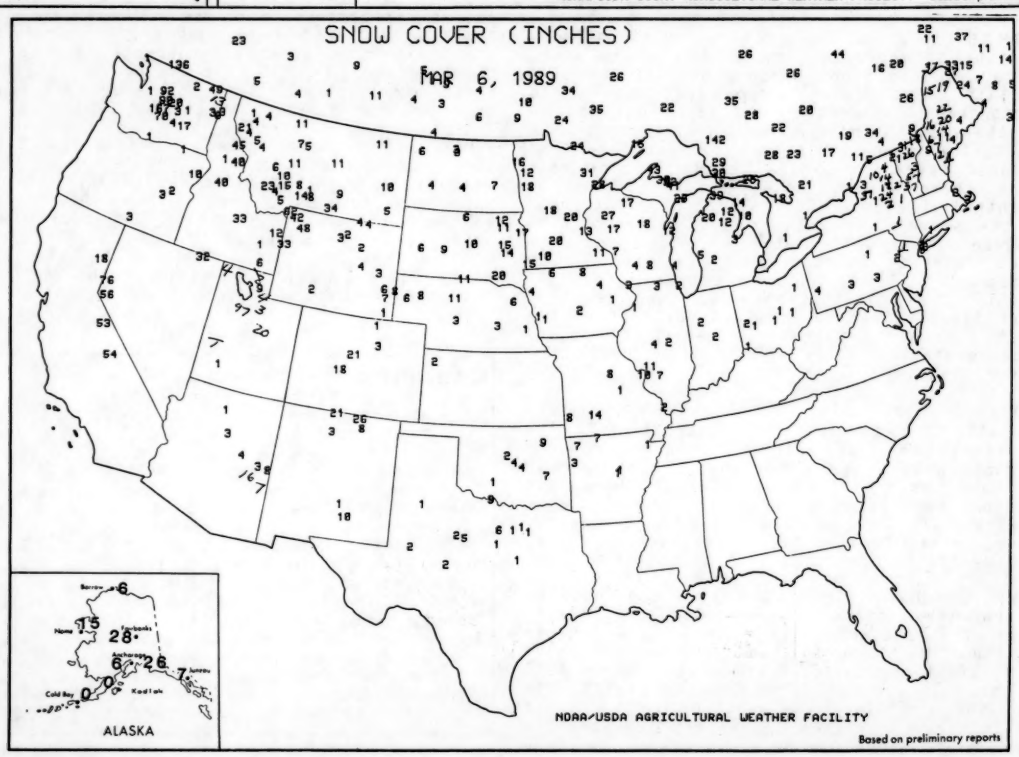
THURSDAY: The winter storm moved into the northern Rockies, bringing winter conditions to most areas of the Pacific Northwest, Great Basin, northern Rockies, and California. Seattle, Washington, reported up to 16 inches of snow. The northern Plains continued to be chilled by frigid temperatures and high winds. The stalled cold front again brought showers and thunderstorms to the Southern United States.

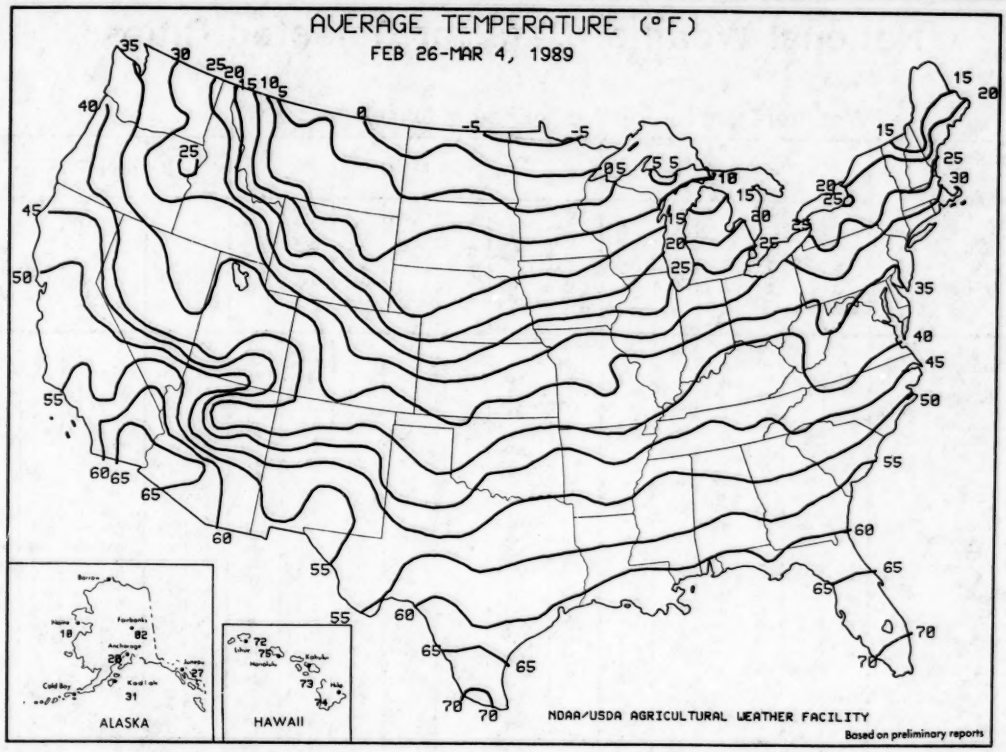
(Continued to p. 15)

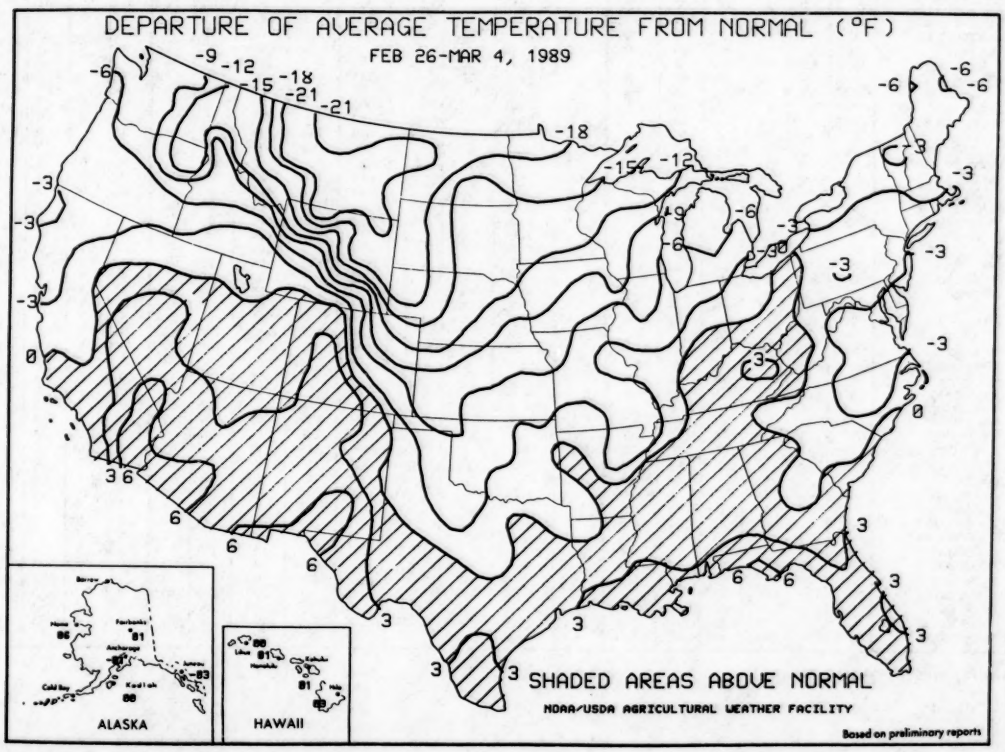
Contents

	Page
National Weather Summary	1
Total Precipitation & Snow Cover	2
Average Temperature & Departure	3
National Weather Data for Selected Cities	4
Heating Degree Day Summary	7
Extreme Minimum Temperature	8
February Weather and Crop Summary (Including an Historical Perspective)	8
February Precipitation & Percentage of Normal	11
February Average Temperature & Departure	12
February Weather Data for Selected Cities	13
February Heating Degree Days Table	14
National Agricultural Summary	15
State Summaries of Weather and Agriculture	16
International Weather and Crop Summary & February Temperature and Precipitation Table	20
Subscription and Mailing Permit Information	24


TOTAL PRECIPITATION, INCHES
FEB 26 - MAR 4, 1989
ALASKA
HAWAII
GREATER THAN 2 INCHES
GREATER THAN 4 INCHES
NO PRECIPITATION
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


SNOW COVER (INCHES)
MAR 6, 1989
ALASKA
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


AVERAGE TEMPERATURE (°F)
FEB 26-MAR 4, 1989
ALASKA
HAWAII
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)
FEB 26-MAR 4, 1989
SHADED AREAS ABOVE NORMAL
ALASKA
HAWAII
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports

National Weather Data for Selected Cities

Weather Data for the Week Ending March 4, 1989

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMPERATURE °F		PRECIPITATION	
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	57	44	64	38	50	1	3.5	2.2	1.6	1.7	208	9.9	92	93	63	0	0	5	3
MOBILE	68	51	80	44	60	3	1.0	-.4	1.0	1.0	125	4.6	45	93	62	0	0	2	1
MONTGOMERY	62	49	73	45	55	2	2.6	1.3	1.8	1.9	258	6.8	73	95	67	0	0	4	2
AK ANCHORAGE	27	12	32	4	20	-1	T	-.2	T	T	22	.5	27	74	38	0	7	1	0
BARROW	7	-16	29	-38	-4	15	.1	.1	.1	.1	400	.4	93	91	65	0	7	4	0
FAIRBANKS	15	-11	28	-24	2	1	.1	0	.1	.1	150	1.6	152	83	52	0	7	3	0
JUNEAU	33	21	38	10	27	-3	.3	-.6	.2	.3	61	7.1	91	89	52	0	7	3	0
KODIAK	39	23	48	10	31	0	T	-1.0	T	T	0	4.0	35	69	33	0	6	1	0
NOME	17	3	30	-10	10	6	.1	-.1	0	.1	100	3.0	224	92	70	0	7	3	0
AZ PHOENIX	77	53	89	39	65	7	T	-.2	T	T	18	1.2	86	42	15	0	0	1	0
PRESCOTT	60	31	74	17	46	5	T	-.3	T	T	18	1.7	49	61	24	0	4	1	0
TUCSON	75	47	85	33	61	5	T	-.2	T	T	0	1.2	79	47	15	0	0	0	0
YUMA	80	58	94	48	69	7	T	-.1	T	T	0	.6	94	55	19	2	0	0	0
AR FORT SMITH	59	37	71	27	48	2	1.9	1.1	1.9	1.9	420	11.8	247	93	56	0	1	2	1
LITTLE ROCK	53	37	64	30	45	-3	2.9	2.0	1.7	1.7	316	13.5	164	86	65	0	2	4	2
CA BAKERSFIELD	67	44	77	33	55	0	.3	.1	.3	.3	223	1.3	59	89	38	0	0	1	0
EUREKA	53	41	58	33	47	-2	.8	-.4	.5	.8	120	8.4	66	84	62	0	0	4	0
FRESNO	62	41	74	36	52	-1	.9	.5	.9	.9	427	2.6	63	97	49	0	0	2	1
LOS ANGELES	64	50	74	43	57	-1	.3	-.2	.3	.3	111	2.6	45	92	55	0	0	1	0
REDDING	59	35	72	28	47	-6	2.3	1.0	1.0	2.3	318	5.5	36	91	39	0	1	3	2
SACRAMENTO	61	39	74	34	50	-2	1.1	.5	.6	1.1	360	3.1	42	95	45	0	0	3	1
SAN DIEGO	64	52	79	44	58	0	.1	-.4	.1	.1	25	1.2	29	85	53	0	0	1	0
SAN FRANCISCO	58	44	67	40	51	-1	.6	-.1	.5	.6	163	3.2	38	88	56	0	0	3	1
CO DENVER	35	17	53	0	26	-9	.4	.2	.3	.3	238	2.1	164	97	60	0	7	5	0
GRAND JUNCTION	49	29	58	17	39	1	.3	.2	.3	.3	400	2.6	213	84	37	0	5	2	0
PUEBLO	47	19	64	8	33	-4	T	-.1	T	T	0	1.1	196	95	43	0	7	0	0
CT BRIDGEPORT	39	27	41	19	33	-1	T	-.8	T	0	0	3.8	57	74	45	0	6	0	0
HARTFORD	38	20	40	11	29	-3	.2	-.6	.2	T	6	2.8	38	83	36	0	7	3	0
DC WASHINGTON	44	32	48	29	38	-3	.2	-.5	.1	.1	17	5.4	93	87	48	0	4	3	0
FL APALACHICOLA	71	56	79	38	64	7	1.1	.1	1.1	1.1	202	4.2	55	95	71	0	0	1	1
DAYTONA BEACH	76	53	86	34	65	3	.9	.2	.6	.9	217	8.4	142	96	52	0	0	3	1
JACKSONVILLE	73	51	83	31	62	3	.8	-.1	.5	.8	160	4.3	61	98	56	0	1	4	0
KEY WEST	79	65	83	46	72	0	.1	-.3	.1	T	5	.8	20	93	63	0	0	2	0
MIAMI	81	63	86	41	72	2	.5	.1	.4	.1	52	1.5	35	91	52	0	0	3	0
ORLANDO	79	54	88	33	66	3	.8	-.1	.4	.7	143	4.6	81	96	47	0	0	3	0
TALLAHASSEE	72	50	81	27	61	4	.7	-.6	.7	.7	93	4.1	39	98	58	0	1	3	1
TAMPA	76	57	86	35	66	3	1.4	.6	.9	1.4	306	3.4	60	95	56	0	0	3	1
WEST PALM BEACH	81	57	85	38	69	1	1.5	.9	.9	.6	163	2.5	45	88	50	0	0	4	2
GA ATLANTA	55	44	65	38	50	1	1.5	.2	.9	.5	70	7.4	73	93	64	0	0	6	1
AUGUSTA	58	42	69	28	50	0	2.1	1.0	.6	1.7	267	6.4	74	98	69	0	1	5	2
MACON	58	45	69	33	51	-1	2.7	1.5	1.8	2.2	321	8.6	92	95	74	0	0	5	2
SAVANNAH	63	48	73	32	55	1	.6	-.2	.3	.4	73	1.5	22	93	65	0	1	3	0
HI HILO	82	66	87	60	74	3	.7	-2.6	.6	.7	40	34.7	141	90	61	0	0	3	1
HONOLULU	81	69	83	66	75	2	2.8	2.0	1.5	2.6	557	11.1	161	90	66	0	0	5	2
KAHULUI	80	66	83	55	73	1	1.1	.4	.5	1.1	287	8.1	110	94	67	0	0	4	1
LIHUE	77	66	82	63	72	0	9.0	8.0	4.0	7.7		26.1	250	93	72	0	0	6	3
ID BOISE	41	24	50	18	33	-6	.5	.3	.5	.5	415	2.8	101	89	48	0	7	2	0
LEWISTON	39	27	45	18	33	-8	.3	.1	.2	.3	246	2.1	88	79	53	0	6	2	0
POCATELLO	38	24	47	11	31	-2	.8	.6	.8	.8	709	2.7	134	85	57	0	7	2	1
IL CHICAGO	32	17	46	11	25	-6	.5	.1	.4	.5	196	2.1	69	87	60	0	7	4	0
MOLINE	32	15	43	5	23	-7	.7	.3	.6	.7	265	3.1	99	88	61	0	7	2	1
PEORIA	34	17	47	5	25	-6	.5	0	.5	.5	168	2.6	80	90	61	0	7	2	0
QUINCY	39	21	51	14	30	-3	.3	-.2	.3	.3	106	1.6	52	94	62	0	7	2	0
ROCKFORD	28	13	38	8	21	-7	.7	.3	.5	.7	287	2.1	75	87	67	0	7	3	1
SPRINGFIELD	38	22	54	13	30	-4	.3	-.3	.2	.3	87	2.4	68	90	53	0	6	2	0
IN EVANSVILLE	51	29	66	20	40	1	.8	-.2	.8	.8	139	11.1	170	80	45	0	5	1	1
FORT WAYNE	37	19	52	14	28	-3	.3	-.3	.2	.2	66	3.3	76	90	57	0	7	3	0
INDIANAPOLIS	44	25	61	16	34	0	.5	-.2	.5	.5	117	3.6	65	84	50	0	5	3	0
SOUTH BEND	32	18	47	10	25	-6	.3	-.2	.1	.3	84	2.9	61	87	63	0	7	4	0
IA DES MOINES	30	14	36	11	22	-7	.3	-.1	.2	.2	109	2.6	114	87	66	0	7	4	0
SIOUX CITY	23	11	37	5	17	-11	.4	.1	.2	.4	239	1.8	101	86	61	0	7	4	0
WATERLOO	26	9	32	3	17	-8	.5	.1	.4	.5	225	1.8	94	89	66	0	7	2	0
KS CONCORDIA	35	19	42	6	27	-8	.2	-.2	.2	T	10	1.1	68	87	62	0	7	2	0
DODGE CITY	42	21	48	5	32	-6	.1	-.2	0	T	0	.5	48	93	60	0	6	2	0
GOODLAND	30	14	49	-1	22	-12	.1	0	.1	.1	45	.4	52	93	68	0	7	3	0
TOPEKA	39	21	66	12	30	-6	.6	.2	.5	.1	41	2.2	101	82	58	0	7	2	0
WICHITA	46	24	65	10	35	-4	T	-.4	T	T	0	1.2	69	81	43	0	7	0	0
KY BOWLING GREEN	53	32	67	24	43	1	1.0	-.2	.8	.8	124	18.0	194	89	50	0	4	2	1
LEXINGTON	52	30	73	20	41	3	.1	-.9	.1	.1	11	14.2	191	74	38	0	5	1	0
LOUISVILLE	53	32	73	21	42	2	.2	-.8	.2	.2	29	12.8	180	70	34	0	5	1	0
LA ALEXANDRIA	64	48	73	44	56	1	1.4	.2	1.2	1.3	216	15.6	160	93	66	0	0	5	1
BATON ROUGE	70	53	83	46	61	5	.9	-.3	.7	.8	134	6.3	62	97	65	0	0	4	1
LAKE CHARLES	69	51	79	44	60	3	.7	-.1	.6	.7	169	5.9	70	96	69	0	0	2	1
NEW ORLEANS	70	53	80	49	62	4	.2	-1.0	.2	.2	30	2.8	26	97	65	0	0	1	0

Based on 1951-80 normals

Weather Data for the Week Ending March 4, 1989

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMPERATURE °F		PRECIPITATION	
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
SHREVEPORT	62	42	71	34	52	-1	.9	.1	.3	.7	144	11.9	150	98	70	0	0	5	0
ME CARIBOU	24	2	31	-9	13	-5	T	-.5	T	T	10	3.4	71	87	48	0	7	1	0
PORTLAND	32	13	40	3	22	-5	T	-.9	T	T	0	3.5	45	78	35	0	7	1	0
MD BALTIMORE	43	29	46	24	36	-3	.2	-.6	.2	.1	13	6.5	101	93	49	0	6	3	0
SALISBURY	44	28	51	17	36	-4	.3	-.6	.2	.2	31	4.7	65	93	54	0	6	2	0
MA BOSTON	35	24	41	14	30	-4	.3	-.7	.2	T	0	3.1	38	73	39	0	7	2	0
CHATHAM	37	26	41	14	32	-2	.5	-.5	.2	0	0	5.2	57	86	66	0	7	2	0
MI ALPENA	24	6	32	-1	15	-7	.9	.6	.5	.7	370	2.8	86	91	65	0	7	5	0
DETROIT	34	20	46	9	27	-3	.2	-.3	.1	.2	74	2.3	60	90	58	0	7	3	0
FLINT	30	14	44	6	22	-5	.3	-.1	.2	.3	118	2.1	65	88	63	0	7	3	0
GRAND RAPIDS	29	13	41	3	21	-7	.5	0	.3	.4	162	2.4	64	92	67	0	7	6	0
HOUGHTON LAKE	23	7	32	-3	15	-6	1.0	.7	.5	.9	440	2.6	86	89	71	0	7	6	0
LANSING	29	13	43	6	21	-6	.3	-.1	.2	.3	104	2.1	64	91	65	0	7	3	0
MARQUETTE	12	-8	24	-26	2	-16	1.0	.5	.4	.6	206	4.1	97	95	70	0	7	4	0
MUSKEGON	29	16	43	13	23	-5	.7	.3	.4	.5	204	3.2	75	90	66	0	7	6	0
SAULT ST. MARIE	17	-2	29	-13	8	-11	1.0	.5	.3	.6	258	4.7	115	89	60	0	7	6	0
MN ALEXANDRIA	10	-5	17	-14	2	-15	.4	.2	.1	.2	218	1.2	70	85	68	0	7	4	0
DULUTH	11	-8	17	-29	1	-16	.3	0	.1	.2	100	2.4	107	83	52	0	7	4	0
INT'L FALLS	9	-19	18	-29	-5	-18	T	-.2	T	T	9	1.7	104	86	46	0	7	3	0
MINNEAPOLIS	15	3	22	-3	9	-13	.8	.5	.4	.7	394	2.3	124	85	59	0	7	4	0
ROCHESTER	17	4	25	-1	11	-12	.8	.5	.5	.7	418	1.5	91	88	65	0	7	6	0
MS GREENWOOD	60	45	69	37	52	2	2.4	1.1	2.2	.2	24	13.9	133	89	60	0	0	3	1
JACKSON	62	46	74	41	54	2	1.9	.7	1.0	1.3	206	8.2	83	99	77	0	0	5	1
MERIDIAN	61	46	72	41	54	1	2.5	1.2	1.2	1.9	244	8.9	86	97	70	0	0	5	3
MO CAPE GIRARDEAU	48	30	56	24	39	—	2.1	1.1	1.8	1.8	319	15.2	233	88	56	0	5	3	1
COLUMBIA	44	27	55	20	35	-2	.2	-.4	.1	.2	44	3.1	77	86	49	0	6	3	0
KANSAS CITY	38	23	61	17	31	-7	.1	-.4	.1	T	11	1.6	60	87	55	0	7	2	0
SAINT LOUIS	46	29	58	22	38	0	.2	-.5	.1	.2	49	4.2	100	79	43	0	6	2	0
SPRINGFIELD	47	27	55	22	37	-3	1.5	.8	1.3	1.3	332	4.9	118	90	60	0	6	3	1
MT BILLINGS	16	0	37	-19	8	-23	.6	.4	.2	.5	522	2.3	132	79	58	0	7	5	0
GLASGOW	9	-8	28	-19	0	-21	.2	.1	.1	T	100	1.3	185	89	63	0	7	3	0
GREAT FALLS	15	-2	38	-14	7	-22	.9	.7	.3	.4	467	2.6	143	90	58	0	7	5	0
HAVRE	14	-2	31	-16	6	-19	T	-.1	T	T	0	.8	73	81	57	0	7	0	0
HELENA	15	-1	38	-19	7	-22	.7	.6	.3	.5	686	2.7	228	90	56	0	7	5	0
KALISPELL	23	6	40	-8	15	-15	.3	.1	.1	.1	55	2.7	99	81	50	0	7	4	0
MILES CITY	11	0	30	-24	6	-21	.3	.2	.2	.3	417	1.6	127	70	51	0	7	4	0
MISSOULA	23	8	40	-9	16	-16	.4	.3	.2	.3	367	1.5	68	88	50	0	7	3	0
NE GRAND ISLAND	26	14	41	1	20	-11	.3	.1	.2	.3	193	1.7	115	89	68	0	7	5	0
LINCOLN	29	18	36	7	24	-7	.1	-.3	.1	.1	40	2.0	110	91	69	0	7	2	0
NORFOLK	23	10	39	3	17	-12	.7	.4	.3	.6	369	2.4	164	89	64	0	7	5	0
NORTH PLATTE	22	10	37	-2	16	-15	.5	.3	.2	.2	218	1.5	150	92	71	0	7	6	0
OMAHA	26	15	34	8	20	-11	.3	0	.2	.3	153	1.8	101	83	61	0	7	4	0
SCOTTSBLUFF	19	6	33	-11	13	-20	.9	.7	.4	.4	400	1.4	151	91	70	0	7	5	0
VALENTINE	18	7	40	-4	12	-15	.3	.2	.3	.3	413	1.1	145	74	54	0	7	2	0
NV ELY	47	21	56	7	34	3	.2	0	.2	.2	191	1.1	71	84	32	0	7	2	0
LAS VEGAS	70	48	82	37	59	6	T	-.1	T	T	0	.6	58	34	14	0	0	0	0
RENO	54	27	65	18	41	1	.1	-.1	.1	.1	73	1.1	48	82	26	0	5	3	0
WINNEMUCCA	48	25	59	18	37	-1	.2	.1	.2	.2	263	1.1	69	90	35	0	6	1	0
NH CONCORD	32	11	37	0	22	-5	.1	-.5	.1	T	6	2.8	51	89	36	0	7	3	0
NJ ATLANTIC CITY	42	26	45	17	34	-3	.1	-.8	.1	T	0	5.9	81	94	54	0	6	2	0
NM ALBUQUERQUE	60	34	74	25	47	4	.1	-.1	0	.1	83	1.0	120	58	21	0	2	2	0
CLOVIS	55	29	68	9	42	-1	.1	0	.1	.1	117	.8	80	86	35	0	3	1	0
ROSWELL	66	39	83	16	53	6	.1	0	.1	.1	150	.9	102	68	27	0	1	1	0
NY ALBANY	34	17	39	7	26	-2	.1	-.6	0	T	11	2.1	42	87	39	0	7	3	0
BINGHAMTON	30	18	36	12	24	-2	.3	-.3	.2	.1	17	3.5	69	91	56	0	7	5	0
BUFFALO	31	17	52	12	24	-4	.4	-.2	.2	.2	43	4.5	78	93	60	0	7	5	0
NEW YORK	40	32	44	29	36	-1	.1	-.7	.1	T	0	5.4	81	77	40	0	4	1	0
ROCHESTER	31	17	48	11	24	-4	.4	-.2	.3	.3	103	3.1	62	90	54	0	7	2	0
SYRACUSE	32	18	42	14	25	-3	.3	-.4	.1	.2	53	3.0	53	91	49	0	7	6	0
NC ASHEVILLE	51	31	61	22	41	-1	2.5	1.5	1.7	.4	72	6.7	96	96	51	0	4	4	1
CHARLOTTE	54	37	66	31	45	-1	2.3	1.2	1.2	.8	123	7.1	86	91	51	0	1	4	2
GREENSBORO	48	32	57	26	40	-4	2.0	1.1	.9	.5	94	5.9	80	92	51	0	5	4	2
HATTERAS	56	41	64	28	49	1	.4	-.6	.2	.2	41	6.7	71	95	65	0	1	3	0
NEW BERN	55	40	60	28	48	-1	.5	-.4	.3	.1	24	6.7	79	94	62	0	1	4	0
RALEIGH	50	35	58	28	42	-3	2.2	1.3	1.0	.8	163	8.6	115	91	53	0	3	4	2
WILMINGTON	61	42	66	29	52	1	.8	-.1	.4	.7	142	5.0	65	91	59	0	1	4	0
ND BISMARCK	12	-3	26	-9	5	-16	.2	.1	.1	.1	217	.9	95	83	60	0	7	4	0
FARGO	8	-6	13	-17	1	-16	.6	.5	.3	.4	717	2.5	254	85	65	0	7	4	0
GRAND FORKS	6	-12	11	-21	-3	-18	.1	-.1	0	T	38	1.8	134	81	59	0	7	2	0
WILLISTON	8	-11	23	-21	-2	-22	.2	.1	.1	T	60	1.4	141	84	60	0	7	3	0
OH AKRON-CANTON	39	23	63	14	31	0	.2	-.5	.2	T	0	4.4	86	89	54	0	6	1	0
CINCINNATI	48	29	72	18	38	2	.2	-.6	.1	.1	28	8.0	128	77	42	0	5	2	0
CLEVELAND	39	24	62	14	31	0	.2	-.4	.1	T	9	3.8	77	88	54	0	6	4	0
COLUMBUS	43	25	67	17	34	0	.4	-.3	.3	T	0	5.1	96	83	48	0	6	2	0

Weather Data for the Week Ending March 4, 1989

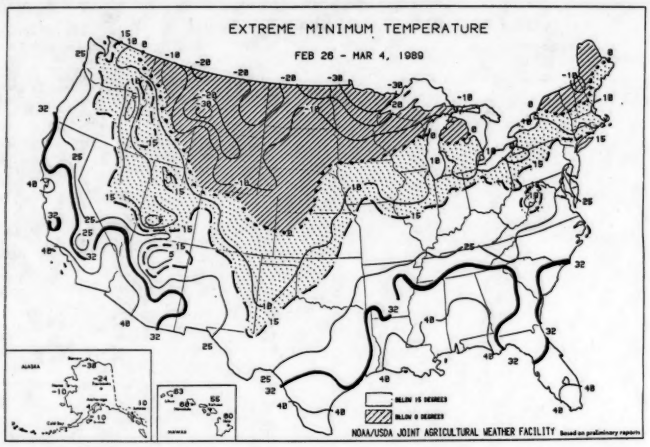
STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMPERATURE °F		PRECIPITATION	
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	43	25	63	17	34	0	.4	-.2	.2	.2	59	5.6	112	82	52	0	6	2	0
TOLEDO	36	20	55	9	28	-2	.1	-.4	.1	.1	28	2.6	65	91	60	0	7	1	0
YOUNGSTOWN	39	22	62	11	30	1	.1	-.5	.1	T	0	3.9	74	90	50	0	6	1	0
OK OKLAHOMA CITY	51	32	74	16	41	-3	.4	0	.3	.3	139	3.7	148	90	51	0	3	3	0
TULSA	51	30	70	20	41	-4	.9	.3	.6	.6	191	5.8	171	90	52	0	4	3	1
OR ASTORIA	46	32	51	24	39	-5	.6	-1.2	.3	.4	37	15.3	78	94	66	0	4	4	0
BURNS	38	20	45	15	29	-6	T	-.2	T	T	15	.6	21	78	49	0	7	1	0
MEDFORD	51	27	61	23	39	-5	.9	.5	.6	.9	346	3.8	66	92	46	0	6	3	1
PENDLETON	36	23	45	11	29	-13	.3	0	.2	.3	200	3.6	120	88	62	0	5	2	0
PORTLAND	45	30	54	19	38	-7	.9	.1	.6	.9	184	7.1	67	97	57	0	4	4	1
SALEM	47	30	53	28	38	-6	.7	-.3	.4	.7	115	7.1	58	98	57	0	7	4	0
PA ALLENTOWN	39	25	43	20	32	-1	.2	-.6	.2	T	0	4.0	58	86	40	0	6	1	0
ERIE	35	21	58	9	28	-1	.4	-.2	.3	T	10	5.0	104	88	57	0	7	4	0
HARRISBURG	41	25	43	21	33	-2	.1	-.6	.1	T	5	4.2	69	87	39	0	6	2	0
PHILADELPHIA	42	29	46	25	35	-1	.3	-.5	.3	T	0	5.7	88	90	45	0	6	2	0
PITTSBURGH	42	24	65	16	33	0	.3	-.4	.3	T	0	5.4	96	83	45	0	6	2	0
SCRANTON	37	23	45	17	30	-1	.2	-.4	.1	T	7	2.8	61	86	43	0	6	3	0
RI PROVIDENCE	38	22	42	7	30	-3	.2	-.7	.2	T	0	3.9	47	83	38	0	7	2	0
SC CHARLESTON	63	47	71	34	55	2	1.4	.4	.9	1.3	226	4.5	62	93	64	0	0	4	1
COLUMBIA	57	41	66	29	49	-1	1.4	.3	.4	1.0	154	6.2	69	96	65	0	1	6	0
FLORENCE	56	41	66	31	48	-2	1.1	.2	.6	.9	172	5.4	73	92	64	0	1	4	1
GREENVILLE	55	36	66	31	46	-1	2.7	1.4	1.6	.7	96	7.2	76	95	55	0	2	4	1
SD ABERDEEN	13	1	30	-4	7	-14	.4	.2	.2	.3	378	1.2	103	88	68	0	7	4	0
HURON	16	3	33	-3	10	-14	.9	.7	.5	.9	677	1.9	149	86	67	0	7	4	1
RAPID CITY	16	4	35	-9	10	-19	.6	.4	.4	.5	567	.9	80	88	62	0	7	5	0
SIOUX FALLS	18	5	35	0	12	-13	.5	.2	.3	.5	325	1.3	80	85	69	0	7	4	0
TN CHATTANOOGA	56	39	65	34	48	2	3.5	2.2	2.2	.9	121	13.4	125	90	49	0	0	3	2
KNOXVILLE	57	33	69	25	45	0	1.2	.1	.9	.1	12	11.3	119	88	41	0	3	4	1
MEMPHIS	57	39	65	29	48	1	1.7	.6	1.0	.8	117	19.2	201	86	56	0	1	2	2
NASHVILLE	55	35	70	26	45	1	1.0	-.2	.6	.6	82	14.4	158	91	48	0	4	3	1
TX ABILENE	58	38	78	18	48	-3	.3	.1	.3	.3	255	3.9	188	93	52	0	1	1	0
AMARILLO	52	27	72	8	39	-3	T	-.2	T	T	0	.7	64	87	41	0	5	0	0
AUSTIN	66	47	84	29	56	0	.4	-.1	.3	.4	182	5.1	119	98	65	0	1	3	0
BEAUMONT	69	50	75	35	60	2	.8	0	.8	.8	195	7.8	89	95	68	0	0	4	1
BROWNSVILLE	79	58	87	42	68	3	T	-.2	T	T	33	2.1	73	96	60	0	0	1	0
CORPUS CHRISTI	77	52	93	35	64	2	T	-.2	T	T	0	2.9	92	96	58	1	0	0	0
DEL RIO	74	48	86	30	61	2	0	-.2	0	0	0	2.0	136	84	37	0	1	0	0
EL PASO	70	46	82	26	58	7	T	-.1	T	T	0	.8	98	55	18	0	1	0	0
FORT WORTH	63	43	77	23	53	1	.2	-.3	.2	.2	63	6.4	169	91	57	0	1	1	0
GALVESTON	66	53	72	36	59	1	.1	-.4	0	.1	30	6.5	116	96	77	0	0	3	0
HOUSTON	68	49	77	30	59	1	.9	.3	.6	.9	263	6.6	93	97	73	0	1	3	1
LUBBOCK	56	32	72	13	44	-2	.3	.1	.2	.3	290	1.8	179	88	44	0	2	2	0
MIDLAND	66	39	87	19	52	1	.2	0	.2	.2	250	1.7	163	96	35	0	1	1	0
SAN ANGELO	67	43	88	22	55	2	.2	.1	.1	.1	175	3.8	249	92	45	0	1	3	0
SAN ANTONIO	69	48	85	32	58	0	T	-.3	T	T	25	3.3	93	97	56	0	1	2	0
VICTORIA	69	52	83	33	61	1	.1	-.3	.1	.1	47	4.5	104	95	68	0	0	1	0
WACO	63	45	81	25	54	0	.5	.1	.5	.5	245	5.3	135	98	66	0	1	3	1
WICHITA FALLS	56	34	83	19	45	-4	.1	-.2	.1	.1	39	4.6	222	94	51	0	3	2	0
UT CEDAR CITY	52	24	67	4	38	1	.6	.3	.5	.6	431	1.8	117	94	35	0	5	2	1
SALT LAKE CITY	46	27	56	15	37	-1	.9	.6	.6	.8	405	2.9	102	89	38	0	5	3	1
VT BURLINGTON	30	12	36	0	21	-2	.2	-.2	.2	.2	84	1.3	34	82	37	0	7	3	0
VA NORFOLK	47	34	51	28	41	-4	2.6	1.7	1.4	.8	150	9.2	123	92	64	0	3	4	2
RICHMOND	47	31	54	25	39	-4	.6	-.2	.3	.3	54	6.5	95	92	58	0	5	4	0
ROANOKE	47	31	52	24	39	-2	.5	-.4	.2	.2	38	3.5	54	92	46	0	3	4	0
WA QUILLAYUTE	43	28	48	19	35	-7	.7	-2.3	.3	.3	16	22.2	79	96	67	0	5	4	0
SEATTLE-TACOMA	42	30	49	20	36	-8	.9	-.1	.6	.8	156	7.0	66	94	60	0	5	4	1
SPOKANE	29	13	36	-7	21	-14	.4	0	.1	.3	137	2.4	57	95	65	0	7	3	0
YAKIMA	40	22	51	12	31	-8	.1	-.1	.1	.1	88	1.6	70	89	52	0	7	2	0
WV BECKLEY	44	29	59	22	37	1	.1	-.7	.1	T	0	6.2	88	85	47	0	5	1	0
CHARLESTON	51	30	73	23	41	1	.2	-.6	.2	T	0	9.0	127	87	37	0	6	1	0
HUNTINGTON	52	30	74	24	41	1	.1	-.7	.1	T	0	12.3	188	74	35	0	6	1	0
PARKERSBURG	49	27	70	18	38	0	.3	-.4	.3	T	0	8.1	139	85	39	0	6	1	0
WI GREEN BAY	20	8	33	1	14	-8	1.6	1.3	1.3	1.6	821	2.3	98	90	59	0	7	4	1
LACROSSE	22	7	30	1	14	-11	1.5	1.2	1.2	1.5	817	2.3	116	83	52	0	7	4	1
MADISON	26	11	35	5	18	-7	.9	.5	.5	.8	410	2.0	86	85	59	0	7	5	1
MILWAUKEE	29	15	38	7	22	-5	1.2	.8	1.0	1.2	462	2.7	86	87	56	0	7	5	1
WAUSAU	17	2	27	-5	10	-11	.8	.5	.5	.7	384	2.0	96	84	54	0	7	4	0
WY CASPER	20	0	36	-15	10	-19	.4	.3	.2	.1	122	1.6	148	89	66	0	7	6	0
CHEYENNE	28	10	47	-9	19	-11	.2	0	.1	.1	80	1.6	185	99	73	0	7	5	0
LANDER	30	10	43	-8	20	-8	.1	-.1	.1	.1	56	.9	71	88	58	0	7	3	0
SHERIDAN	16	1	34	-14	9	-20	.3	.1	.1	T	36	.9	54	89	58	0	7	3	0
PR SAN JUAN	84	70	86	68	77	0	1.3	.8	.9	.1	20	4.4	84	88	59	0	0	5	1

Heating Degree Days Summary

CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA
ASSESSMENT AND INFORMATION SERVICES CENTER-NESDIS-NOAA

LAST DATE OF DATA COLLECTION PERIOD IS 3- 4-1989
ACCUMULATIONS ARE FROM JULY 1
** = NORMAL LESS THAN 100 OR RATIO INCALCULABLE

STATE CITY	CALL	WEEK TOTAL	WEEK DEV FROM NORM	WEEK DEV FROM L YR	CUM TOTAL	CUM DEV FROM NORM	CUM DEV FROM L YR	CUM DEV FROM NORM PRCT	CUM DEV FROM L YR PRCT
AL BIRMINGHAM	BHM	101	-11	7	2215	-195	-272	-8	-11
AL MOBILE	MOB	40	-23	11	1152	-345	-433	-23	-27
AL MONTGOMERY	MGM	66	-26	4	1686	-290	-314	-15	-16
AK ANCHORAGE	ANC	316	2	81	7961	32	876	0	12
AK BARROW	BRW	481	-112	1	13922	106	762	1	6
AK FAIRBANKS	FAI	438	-10	161	10769	-244	1032	-2	11
AK JUNEAU	JNU	265	20	79	6210	-267	877	-4	16
AK KODIAK	ADQ	237	-7	38	6184	154	418	3	7
AK NOME	OME	383	-47	13	9967	71	678	1	7
AZ FLAGSTAFF	FLG	207	-23	29	4931	-144	1	-3	0
AZ PHOENIX	PHX	24	-32	14	894	-341	4	-28	0
AZ PRESCOTT	PHC	134	-35	16	3199	-376	31	-11	1
AZ TUCSON	TUS	34	-34	6	1313	-118	122	-8	10
AZ WINSLOW	INW	128	-36	15	3423	-383	-178	-10	-5
AZ YUMA	YUM	13	-22	10	747	-115	86	-13	13
AR FORT SMITH	FSM	117	-17	31	2843	-68	-17	-2	-1
AR LITTLE ROCK	LMI	140	18	67	2572	-240	-139	-3	-5
CA BAKERSFIELD	BFL	66	-3	34	1932	198	187	11	11
CA EUREKA	EKA	127	15	59	3018	-79	557	-3	23
CA FRESNO	FAT	90	2	31	2140	25	153	1	8
CA LOS ANGELES	LAX	55	-1	22	1062	5	193	0	22
CA SACRAMENTO	SAC	104	13	60	2139	17	403	1	23
CA SAN DIEGO	SAN	50	1	22	1002	122	186	14	23
CA SAN FRANCISCO	SFO	96	6	47	1981	-183	352	-8	22
CA STOCKTON	SCK	101	10	45	2191	81	280	4	15
CO DENVER	DEN	271	63	105	4539	99	-62	2	-1
CO GRAND JUNCTION	GJT	179	-13	26	4597	91	-149	2	-3
CO PUEBLO	PUB	222	30	73	4340	130	-268	3	-6
CT BRIDGEPORT	BDR	224	4	-2	4043	-19	-135	0	-3
CT HARTFORD	BDL	251	14	4	4680	-50	-98	-1	-2
DE WILMINGTON	ILG	211	13	24	3830	-34	4	-1	0
DC WASHINGTON	DCA	184	14	16	3247	-51	-175	-2	-5
FL APALACHICOLA	AQQ	19	-37	-31	771	-471	-504	-38	-40
FL DAYTONA BEACH	DAB	17	-24	-36	448	-345	-346	-44	-44
FL FORT MEYER	FMY	19	0	-1	151	-261	-139	-63	-48
FL JACKSONVILLE	JAX	31	-26	-38	862	-388	-523	-31	-38
FL KEY WEST	EYW	13	7	4	37	-75	-11	-67	-23
FL MIAMI	MIA	10	3	0	89	-90	-31	-53	-26
FL ORLANDO	MCO	18	-12	-14	299	-307	-241	-51	-45
FL TALLAHASSEE	TLH	38	-29	-40	1163	-286	-476	-20	-29
FL TAMPA	TPA	20	-14	-19	297	-373	-295	-56	-50
FL WEST PALM BEACH	PBI	16	2	3	126	-126	-58	-50	-32
GA ATLANTA	ATL	106	-12	26	2095	-418	-247	-17	-11
GA AUGUSTA	AGS	102	-1	70	2017	-166	135	-8	7
GA MACON	MCN	94	1	7	1766	-206	-348	-10	-16
GA SAVANNAH	SAV	65	-15	-14	1260	-420	-458	-25	-27
HI HILO-HAWAII	ITO	0	0	0	0	0	0	**	**
HI HONOLULU-OAHU	HNL	0	0	0	0	0	0	**	**
HI KAHULUI-MAUI	OGG	0	0	0	0	0	0	**	**
HI LIHUE-KAUAI	LIH	0	0	0	0	0	0	**	**
ID BOISE	BOI	225	42	109	4756	409	580	9	14
ID LEWISTON	LWS	222	54	112	4034	-63	380	-2	10
ID POCATELLO	PIH	239	10	74	5544	294	506	6	10
IL CHICAGO	ORD	281	38	76	4919	-26	-60	-1	-1
IL MOLINE	MLI	289	42	102	4924	-169	-112	-3	-2
IL PEORIA	PIA	277	41	85	4742	-150	-62	-3	-1
IL QUINCY	UIN	243	21	83	4443	-135	-3	-3	0
IL ROCKFORD	RFD	308	47	95	5259	-117	-225	-2	-4
IL SPRINGFIELD	SPI	241	22	63	4448	-26	26	-1	1
IN EVANSVILLE	EVV	172	-10	4	3614	-203	-144	-5	-4
IN FORT WAYNE	FWA	257	17	42	4763	-98	-70	-2	-1
IN INDIANAPOLIS	IND	215	-1	11	4277	-163	-144	-4	-3
IN SOUTH BEND	SBN	279	38	54	4797	-63	-183	-1	-4
IA DES MOINES	DSM	300	48	124	4987	-174	-63	-3	-1
IA DUBUQUE	DBQ	335	60	120	5573	-127	-173	-2	-3
IA SIOUX CITY	SUX	333	73	141	5282	-200	-80	-4	-1
IA WATERLOO	ALO	332	52	122	5685	-185	-66	-3	-1
KS CONCORDIA	CNK	265	54	121	4090	-346	-193	-8	-5
KS DODGE CITY	DDC	233	4	94	3863	-124	-116	-3	-3
KS GOODLAND	GLD	299	82	135	4433	-181	-185	-4	-4
KS TOPEKA	TOP	240	41	96	4045	-224	23	-5	1
KS WICHITA	ICT	207	25	65	3505	-289	-279	-7	-7
KY BOWLING GREEN	BWG	156	-11	6	3442	-54	-87	-2	-2
KY LEXINGTON	LEX	165	-20	-3	3673	-146	-58	-4	-2
KY LOUISVILLE	SDF	158	-19	-6	3426	-208	-149	-6	-4
LA ALEXANDRIA	AEX	61	-18	29	1379	-339	-510	-20	-27
LA BATON ROUGE	BTR	32	-34	3	1076	-413	-329	-28	-23
LA LAKE CHARLES	LCH	34	-28	12	1078	-322	-299	-22	-22
LA NEW ORLEANS	MSY	26	-33	1	898	-428	-377	-32	-30
LA SHREVEPORT	SHV	90	-2	52	1783	-177	-305	-9	-10
ME CARIBOU	CAR	361	30	36	7124	24	223	0	3
ME PORTLAND	PWM	297	29	33	5224	-257	-56	-5	-1
MD BALTIMORE	BWI	203	15	19	3607	-83	-152	-2	-4
MD SALISBURY	SBY	199	21	17	3396	-31	-45	-1	-1
MA BOSTON	BOS	245	26	24	4116	-44	-7	-1	0
MA CHATHAM	CQX	233	11	10	4045	-117	-33	-3	-1
MI ALPENA	APN	349	41	23	5861	-242	-52	-4	-1
MI DETROIT	DTW	267	17	25	4795	-180	-93	-4	-2
MI FLINT	FNT	302	33	38	5151	-127	-105	-2	-2
MI GRAND RAPIDS	GRR	307	43	52	5212	6	-89	0	-2
MI HOUGHTON LAKE	HTL	347	41	50	5914	-205	79	-3	1
MI LANSING	LAN	305	39	49	5238	-21	-108	0	-2
MI MARQUETTE	MQT	435	104	87	7156	221	238	3	3
MI MUSKEGON	MKG	294	30	46	5028	-94	-94	-2	-2
MI SAULT ST MARIE	SSM	399	69	52	6586	-134	54	-2	1
MN ALEXANDRIA	AXN	436	102	188	7131	108	483	2	7
MN DULUTH	DLH	443	105	148	7414	63	227	1	3
MN INT'L FALLS	INL	486	122	161	8065	33	424	0	6
MN MINNEAPOLIS	MSP	389	91	163	6267	53	212	1	4
MN ROCHESTER	RST	380	77	137	6394	29	-56	0	-1
MN SAINT CLOUD	STC	413	90	170	6966	82	347	1	5
MS GREENWOOD	GWO	87	-18	27	2027	-291	-252	-13	-11
MS JACKSON	JAN	76	-20	32	1756	-298	-319	-15	-15
MS MERIDIAN	MEI	78	-20	20	1830	-289	-315	-14	-15
MO CAPE GIRARDEAU	CGI	179	9	32	3442	-165	8	-5	0
MO COLUMBIA	COU	207	7	52	4095	-53	-88	-1	-2
MO KANSAS CITY	MCI	229	37	95	4070	-159	-156	-4	-4
MO SAINT LOUIS	STL	192	1	46	3601	-368	-243	-9	-6
MO SPRINGFIELD	SGF	193	17	51	3729	10	-171	0	-4
MT BILLINGS	BIL	395	157	248	5401	59	512	1	10
MT GLASGOW	GGW	448	136	259	6826	27	795	0	13
MT GREAT FALLS	GTF	404	152	241	5691	-2	547	0	11
MT HAVRE	HVR	411	122	224	6467	-88	592	-1	10
MT HELENA	HLN	404	152	216	6126	103	583	2	11
MT KALISPELL	FCA	351	99	170	5938	-232	147	-4	3
MT MILES CITY	MLS	412	142	246	6146	103	774	2	14
MT MISSOULA	MSO	346	108	173	5781	-25	280	0	5
NE GRAND ISLAND	GRI	315	77	139	4871	-219	-212	-4	-4
NE LINCOLN	LNK	290	51	118	4709	-341	-27	-7	-1
NE NORFOLK	OFK	338	78	151	5195	-301	-162	-5	-3
NE NORTH PLATTE	LBF	341	99	157	5104	-188	-280	-4	-5
NE OMAHA	ON4	310	76	145	4819	-112	-68	-2	-1
NE SCOTTSBLUFF	BFF	363	136	185	5131	90	-128	2	-2
NE VALENTINE	VTN	366	102	162	5560	-31	-194	-1	-3
NV ELY	ELY	214	-24	44	5695	222	380	4	7
NV LAS VEGAS	LAS	48	-39	10	1970	-144	-50	-7	-2
NV RENO	RNO	169	-13	44	4127	-240	351	-5	9
NV WINNEMUCCA	WMC	197	1	67	4865	210	472	5	11
NH CONCORD	CON	303	31	24	5569	-37	-79	-1	-1
NJ ATLANTIC CITY	ACY	214	13	12	3966	122	21	3	1
NM ALBUQUERQUE	ABQ	125	-33	-99	3309	-228	-1171	-6	-26
NM CLOVIS	CVS	158	6	66	3196	-59	165	-2	5
NM ROSWELL	ROW	88	-25	16	2491	-166	-311	-6	-11
NY ALBANY	ALB	274	11	-5	5147	-112	-123	-2	-2
NY BINGHAMTON	BGM	286	11	7	5492	49	24	1	0
NY BUFFALO	BUF	283	22	7	4835	-192	77	-4	2
NY NEW YORK	LGA	202	0	3	3559	-183	-113	-5	-3
NY ROCHESTER	ROC	286	25	3	5036	38	5	1	0
NY SYRACUSE	SYR	279	17	4	5057	-11	38	0	1
NC ASHEVILLE	AVL	166	6	13	3360	-26	-274	-1	-8
NC CAPE HATTERAS	HAT	113	-9	-27	1745	-345	-363	-17	-17
NC CHARLOTTE	CLT	137	3	17	2486	-267	-290	-10	-10
NC GREENSBORO	GSO	175	22	28	3138	-1	-113	0	-3
NC NEW BERN	EWN	121	2	-3	2103	-258	-85	-11	-3
NC RALEIGH DURHAM	RDU	157	14	17	2782	-99	-186	-3	-6
NC WILMINGTON	ILM	94	-12	-29	1904	-169	-219	-8	-10
ND BISMARCK	BIS	421	104	212	6849	-95	391	-1	6
ND FARGO	FAR	446	106	197	7238	54	435	1	6
ND GRAND FORKS	GFK	473	121	217	7668	124	555	2	8
ND WILLISTON	ISN	462	143	263	7173	121	649	2	10
OH AKRON-CANTON	CAK	235	-3	7	4858	-77	-49	-2	-1
OH CLEVELAND	CLE	234	-4	8	4472	-188	-143	-4	-3
OH COLUMBUS	CMH	215	-1	5	4292	-134	-11	-3	0
OH CINCINNATI	CVG	184	-18	-15	3965	-172	-178	-4	-4
OH DAYTON	DAY	215	-4	10	4355	-77	-69	-2	-2
OH TOLEDO	TOL	259	12	29	4819	-180	-101	-4	-2
OH YOUNGSTOWN	YNG	241	-6	5	4801	-135	-42	-3	-1
OK OKLAHOMA CITY	OKC	165	21	64	2914	-170	-158	-6	-5
OK TULSA	TUL	169	25	67	2962	-142	-96	-5	-3
OR ASTORIA	AST	180	33	81	3500	68	282	2	9
OR BURNS	4BW	249	39	94	5889	866	704	17	14
OR MEDFORD	MFR	181	34	78	3253	-253	358	-7	12
OR PENDLETON	PDT	248	87	118	4005	40	166	1	4
OR PORTLAND	PDX	189	49	96	3169	-191	197	-6	7
OR SALEM	SLE	186	39	77	3399	-82	177	-2	5
PA ALLENTOWN	ABE	228	4	4	4236	-134	-237	-3	-5
PA ERIE	ERI	258	-1	11	4547	-384	6	-8	0
PA HARRISBURG	CXY	223	13	26	4164	11	-175	0	-4
PA PHILADELPHIA	PHL	205	7	18	3705	-144	-123	-4	-3
PA PITTSBURGH	PIT	220	-6	3	4377	-201	-42	-4	-1
PA SCRANTON	AVP	242	0	0	4703	-129	-234	-2	-5
RI PROVIDENCE	PVD	246	17	22	4280	-118	-89	-3	-1
SC CHARLESTON	CHS	69	-21	-23	1348	-488	-511	-27	-27
SC COLUMBIA	CAE	111	4	0	2071	-161	-408	-7	-16
SC FLORENCE	FLO	114	8	9	2030	-136	-234	-6	-10
SC GREENVILLE	GSP	135	6	11	2589	-85	-291	-3	-10
SD ABERDEEN	ABR	406	98	190	6777	154	486	2	8
SD HURON	HON	387	93	173	6168	-104	-9	-2	0
SD RAPID CITY	RAP	383	129	217	5381	-53	307	-1	6
SD SIOUX FALLS	FSD	372	85	149	6015	-104	-103	-2	-2
TN CHATTANOOGA	CHA	119	-19	-3	2701	-248	-268	-8	-9
TN KNOXVILLE	TYS	137	-3	-1	3041	32	-217	1	-7
TN MEMPHIS	MEM	117	-11	42	2431	-264	-201	-10	-8
TN NASHVILLE	BNA	139	-8	18	2847	-240	-232	-8	-8
TX ABILENE	ABI	117	22	56	2059	-180	-266	-8	-11
TX AMARILLO	AMA	179	21	44	3328	-49	-301	-1	-8
TX AUSTIN	AUS	61	-7	42	1236	-318	-266	-20	-18
TX BROWNSVILLE	BRO	5	-17	-111	459	-109	-3473	-19	-88
TX CORPUS CHRISTI	CRP	21	-14	13	703	-183	-220	-21	-24
TX DEL RIO	DRT	34	-16	16	1201	-177	-302	-13	-20
TX EL PASO	ELP	48	-47	-14	2098	-208	-250	-9	-11
TX FORT WORTH	DFW	83	-9	36	1914	-74	-226	-4	-11
TX GALVESTON	GLS	38	-16	21	846	-259	-225	-23	-21
TX HOUSTON	IAH	45	-16	28	1108	-388	-260	-19	-19
TX LUBBOCK	LBB	146	12	52	2660	-248	-262	-9	-9
TX MIDLAND ODESSA	MAF	87	-12	28	2281	5	-189	0	-8
TX BEAUMONT	BPT	37	-19	20	1118	-201	-166	-15	-13
TX SAN ANGELO	SJT	77	-8	29	1862	-147	-336	-7	-15
TX SAN ANTONIO	SAT	51	-8	36	1132	-300	-275	-21	-20
TX VICTORIA	VCT	40	-12	27	920	-223	-231	-20	-20
TX WACO	ACT	77	-8	45	1653	-192	-260	-10	-14
TX WICHITA FALLS	SPS	140	26	60	2420	-133	-219	-5	-8
UT BLANDING	4BL	206	2	66	4804	205	356	4	8
UT CEDAR CITY	CDC	189	-11	44	4851	434	390	10	9
UT SALT LAKE CITY	SLC	197	3	69	4676	264	434	6	10
VT BURLINGTON	BTV	307	9	8	5701	-251	88	-4	2
VA LYNCHBURG	LYH	185	15	27	3422	-31	-255	-1	-16
VA NORFOLK	ORF	170	14	23	2589	-155	-111	-6	-4
VA RICHMOND	RIC	183	24	22	3133	-73	-156	-2	-5
VA ROANOKE	ROA	183	17	26	3411	-32	-102	-1	-3
WA COLVILLE	63S	296	80	149	5397	41	397	1	8
WA QUILLAYUTE	UIL	205	44	103	4014	-11	369	0	10
WA SEATTLE-TACOMA	SEA	203	54	94	3507	-84	367	-2	12
WA SPOKANE	GEG	309	99	170	5172	74	387	1	7
WA WALLA WALLA	ALW	256	105	139	4030	345	402	9	11
WA YAKIMA	YKM	234	54	104	4612	26	240	1	5
WV BECKLEY	BKW	196	-8	49	4062	-237	-754	-6	-16
WV CHARLESTON	CRW	169	-10	-4	3587	-146	-131	-4	-4
WV HUNTINGTON	HTS	165	-12	-11	3605	-118	-93	-3	-3
WV PARKERSBURG	PKB	190	-1	-11	3926	24	-56	1	-1
WI GREEN BAY	GRB	354	54	87	5941	-189	-95	-3	-2
WI LACROSSE	LSE	354	69	131	5810	-51	106	-1	2
WI MADISON	MSN	325	45	98	5555	-293	-232	-5	-4
WI MILWAUKEE	MKE	300	33	76	5131	-302	-141	-6	-3
WI WAUSAU	AUW	387	75	127	6433	-67	143	-1	2
WY CASPER	CPR	383	131	198	5707	152	170	3	3
WY CHEYENNE	CYS	320	75	124	5279	80	-129	2	-2
WY LANDER	LND	313	59	132	5774	-89	147	-1	3
WY SHERIDAN	SHR	392	140	227	5809	-156	183	-3	3



February Weather and Crop Summary

HIGHLIGHTS: A blast of bitter arctic air poured into the Central States during the first of the month and spread over much of the Nation. Periods of subzero temperatures remained over the winter wheat areas in the central Plains and the Northwest. Freezing temperatures plunged across California and Texas. During the latter part of the month, a large high pressure system pulled very cold Canadian air across the East into the Deep South. Freezing temperatures reached across central Florida. This cold wave interrupted the anomalous warm weather, which persisted along the South Atlantic coast. Gulf moisture, overriding frontal systems, brought soaking rains from central Texas to the mid-Atlantic coast. Steady, heavy rain caused severe flooding in the Tennessee and lower Ohio Valleys. Snow covered the northern Plains and much of the western Corn Belt but was generally absent over the central Plains and eastern Corn Belt. Low pressure systems brought unusual snowfall into southern California and dumped heavy snow along the middle and northern Atlantic coast. Dry weather generally prevailed over the Pacific Coast States, northern and central Plains, western Corn Belt, and Gulf and South Atlantic coasts. South Florida received the least amount of rainfall on record for the September to February period.

FEBRUARY 1-4: A huge arctic high pressure system over Alaska, which reached the highest recorded pressure in North America (31.85 inches) on January 31, moved southward, causing extreme cold air to plunge into the lower 48 States and spread over much of the Nation. The frigid air mass replaced the record-warm air south of the cold front. Heavy rain reached from eastern Texas to the upper Ohio Valley along and behind the front as it moved slowly to the Southeast. Widespread snow, sleet, and freezing rain fell over the shallow cold air across most of the northern half of the country. Only Florida remained warm and dry.

FEBRUARY 5-11: Frigid arctic air remained over much of the Nation. Early in the week, the cold air plunged across southern Texas into northeastern Mexico and covered much of California. Temperatures dropped into the low 20's in the San Joaquin Valley. Warm weather prevailed only along the south Atlantic coast, although freezing temperatures penetrated northern Florida. Temperatures returned to above normal in Alaska and began to moderate over the lower 48 States at week's end. Moderate to heavy rain fell only in portions of the Southeast. A low pressure system off the California coast spread rain and unusual amounts of snow over that State during the latter part of the week.

FEBRUARY 12-18: Steady, heavy rains soaked central Texas to the upper Ohio Valley and caused severe flooding in the Tennessee and lower Ohio Valleys. Little or no precipitation fell in the central Plains and along the South Atlantic coast. At week's end, storms brought widespread precipitation into the Pacific Northwest and heavy snow across southern Virginia and North Carolina. Record-high temperatures continued to be set across the Southeast, while a cold blast of arctic air settled over the North Central States.

FEBRUARY 19-25: Severe weather and soaking rain covered the Southeast early in the week. Heavy rain added to the severe flooding in the Tennessee and Ohio Valleys. A large high pressure system pulled very cold Canadian air into the eastern half of the Nation. During the last 3 days of the week, freezing temperatures reached into central Florida, while a deep low pressure system dumped heavy snow along the middle and northern Atlantic coast.

FEBRUARY 26-28: A fontal system moved southeastward, leaving widespread precipitation from the northern Plains and Great Lakes into the Southeast. Heavy rain fell from the northern Delta to the mid-Atlantic coast. The South Atlantic coast was warm and dry as temperatures returned to near normal.

Winter Wheat

Early in February, extremely cold temperatures damaged winter wheat in portions of the central and southern Plains. Winter wheat was mostly poor to fair in Kansas. About mid-month, rain improved conditions in portions of the central and southern Plains. Lack of moisture continued to stress winter wheat in the western areas of Kansas and Oklahoma, and the High Plains area of Texas. In the southern Plains, below-normal temperatures slowed winter wheat growth but reduced insect activity. In the northern Plains, snow cover provided mostly adequate protection during periods of cold temperatures. Winter wheat was mostly

fair in Montana and Nebraska. Wind damage remained light in Colorado and Montana. Early in February, cold temperatures and limited snow cover damaged winter wheat in portions of the Pacific Northwest. Russian wheat aphid activity was reduced. Winter wheat was mostly good to fair in the Corn Belt, Southeast, and Delta during February. Flooding was a problem in low lying areas of western Kentucky and Tennessee during the third week of the month. Some freeze damage occurred in portions of the Delta and Southeast during the last week of the month.

Fieldwork

Land preparation for the 1989 cotton crop was active in Arizona and California during February. Snow and rain slowed land preparation in California during the second week of the month. In the Corn Belt, weather conditions limited fieldwork to spreading fertilizer during most of February. Land preparation for spring planting was active in the Southeast but was slowed by rain in the Delta. During the last half of February, rain slowed fieldwork in the East. Corn planting began mid-month in Florida, Georgia, and Texas. Tobacco plant bed preparation and seeding were active in the Southeast.

February Weather in Historical Perspective

National Climatic Data Center, NOAA

Preliminary data for February 1989 indicate that precipitation averaged across the contiguous United States was slightly below the long-term mean (fig. 1). Areally-averaged temperature for the Nation was considerably below the long-term mean, with February 1989 ranking as the eighth coldest February since 1895 (fig. 2).

The United States can be divided into nine climatically homogeneous regions (fig. 3). The temperature and precipitation rankings for February 1989 for each of these regions are listed in table 1. The Northwest region observed the coldest February on record in 1989, and the West North Central had the third coldest February on record. Heavy rainfall along the Ohio and Tennessee River valleys contributed to a February 1989 ranking of twelfth wettest (84th driest) for the Central region.

Figure 1

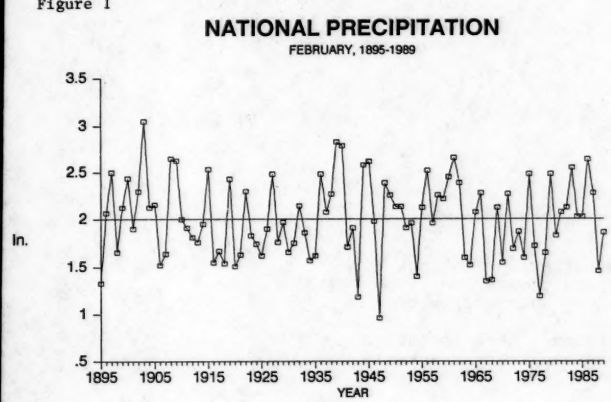


Figure 2

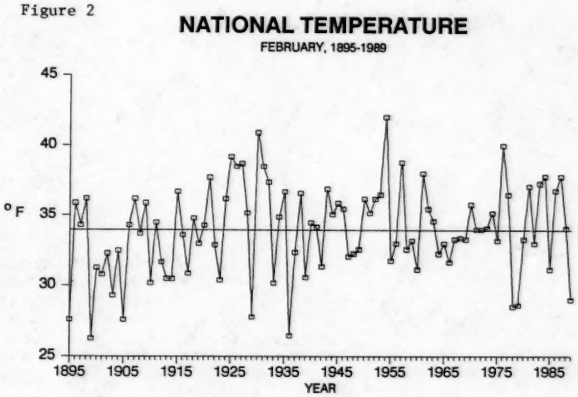


Figure 3

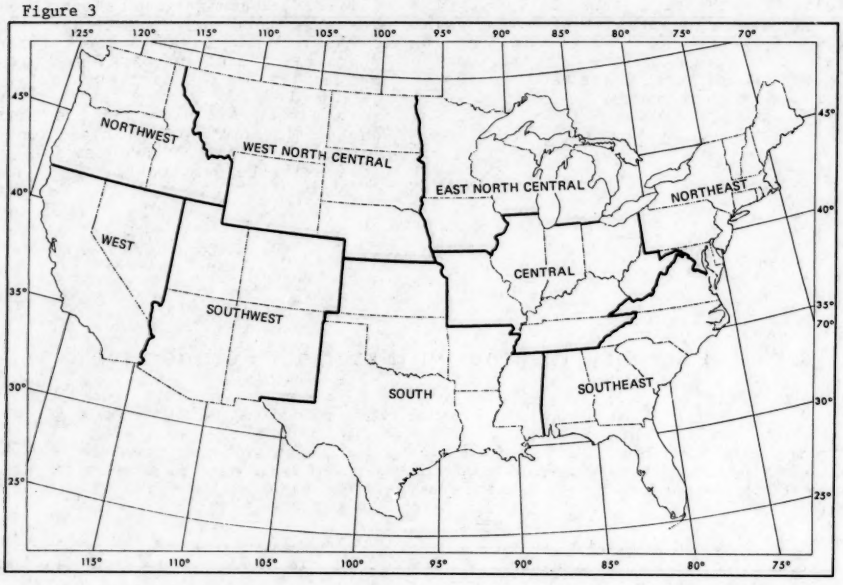
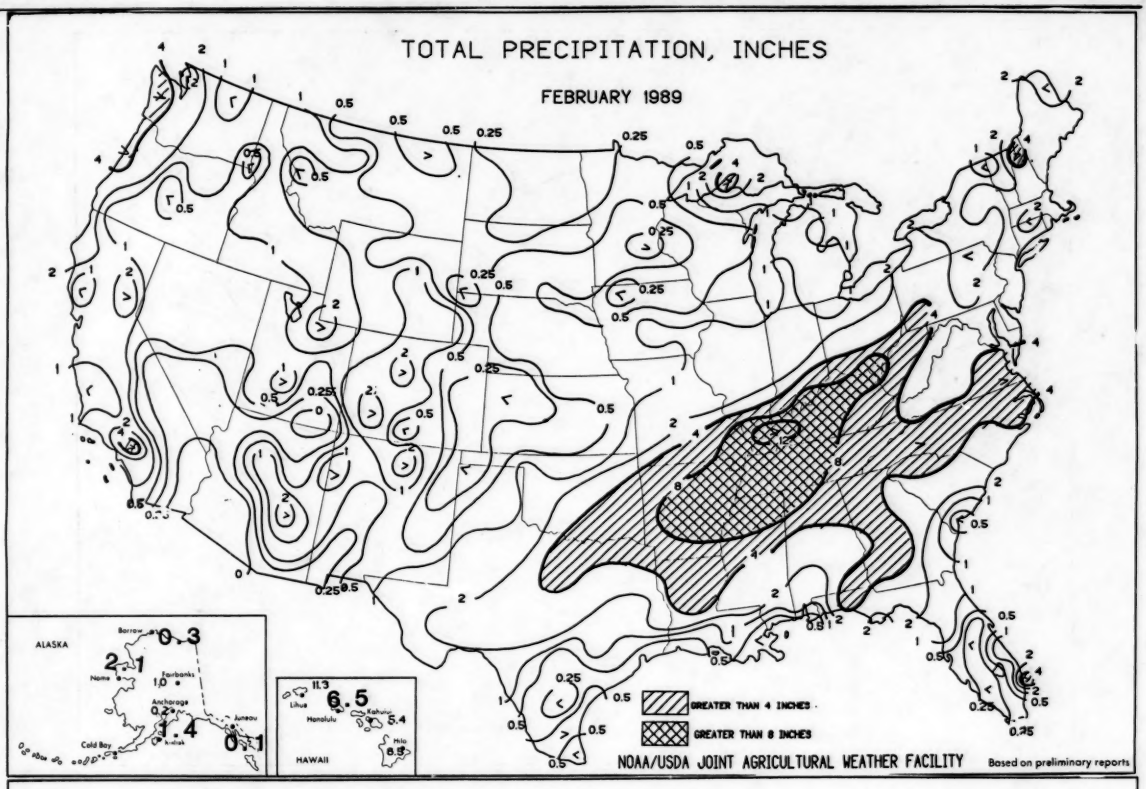
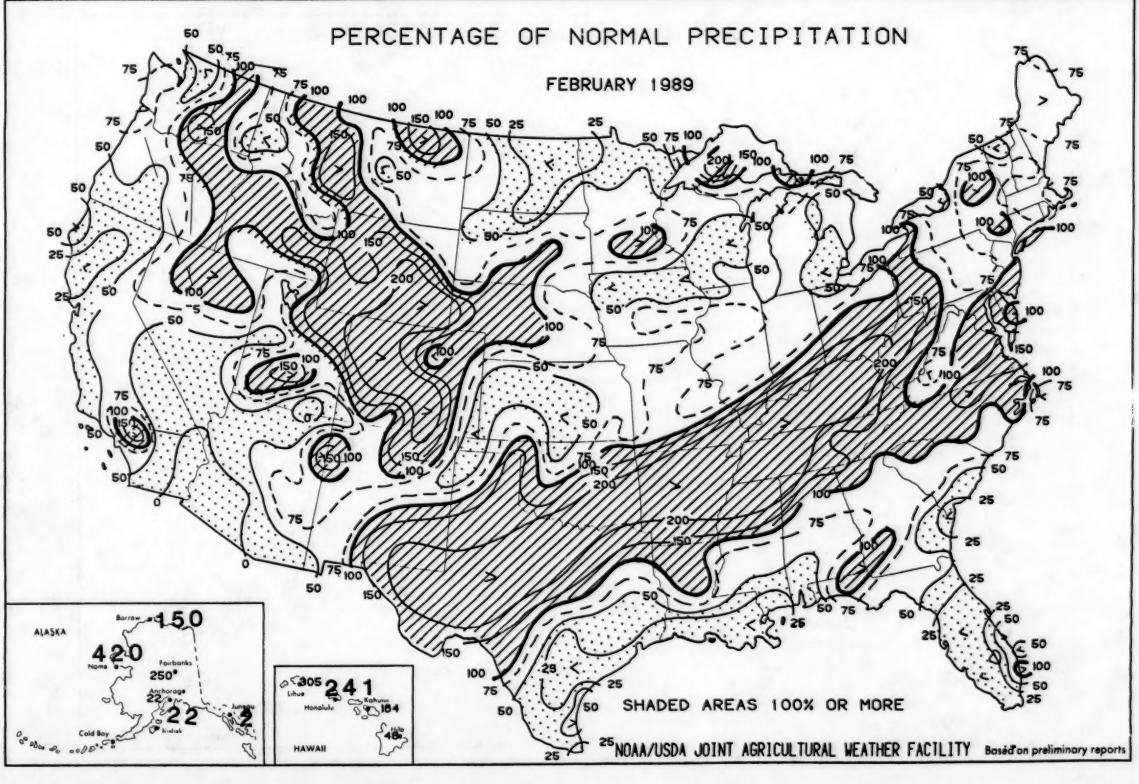
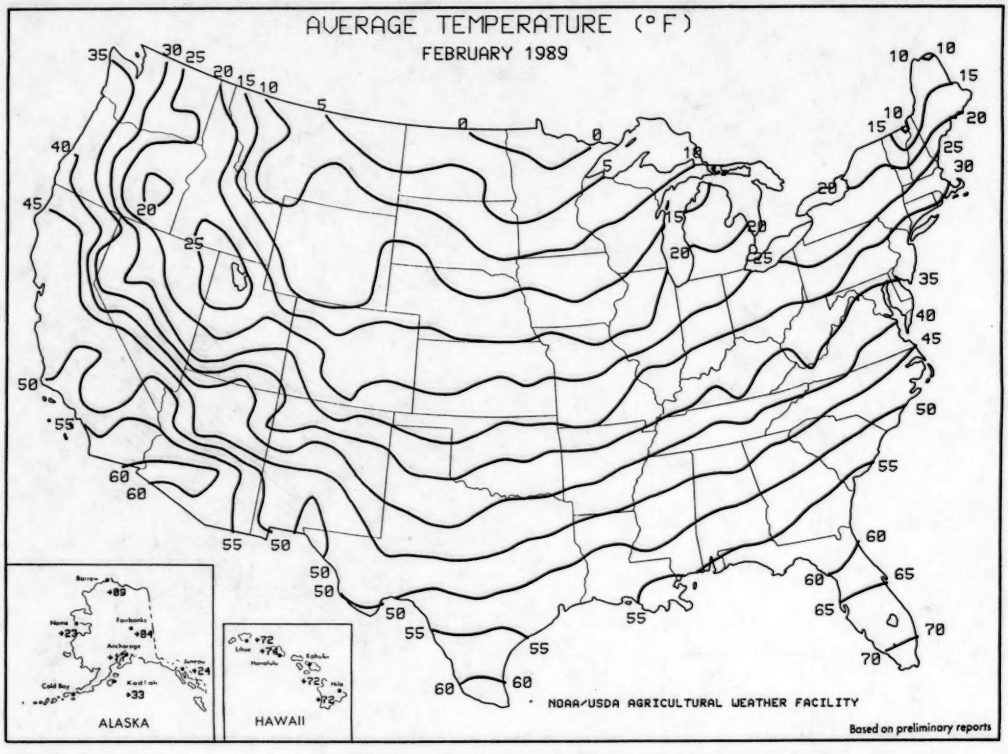


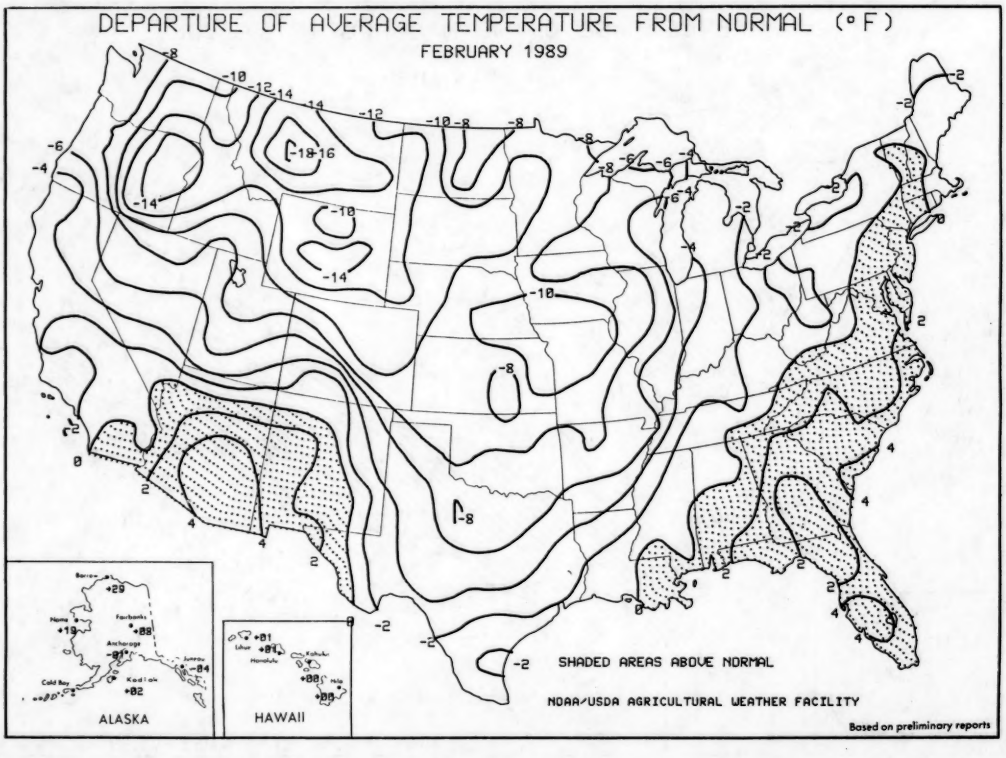
Table 1. Temperature and Precipitation Rankings for February 1989, based on the period 1895-1989. 1 = coldest/driest, 95 = warmest/wettest

Region	Temperature	Precipitation
National	8	36
Northeast	44	27
East North Central	11	15
Central	19	84
Southeast	60	23
West North Central	3	42
South	9	57
Southwest	21	55
Northwest	1	23
West	13	22


TOTAL PRECIPITATION, INCHES
FEBRUARY 1989
ALASKA
Barrow
Nome
Fairbanks
Anchorage
Juneau
Cold Bay
Kodiak
0.3
2.1
1.0
0.2
1.4
0.1
HAWAII
Lihue
Honolulu
Kahului
Hilo
11.3
6.5
5.4
6.9
GREATER THAN 4 INCHES
GREATER THAN 8 INCHES
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


PERCENTAGE OF NORMAL PRECIPITATION
FEBRUARY 1989
ALASKA
Barrow
Nome
Fairbanks
Anchorage
Juneau
Cold Bay
Kodiak
150
420
250
22
22
2
HAWAII
Lihue
Honolulu
Kahului
Hilo
305
241
184
48
SHADED AREAS 100% OR MORE
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


AVERAGE TEMPERATURE (°F)
FEBRUARY 1989
ALASKA
HAWAII
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)
FEBRUARY 1989
SHADED AREAS ABOVE NORMAL
ALASKA
HAWAII
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports

Temperature and Precipitation Data for February 1989

States and Stations	Temperature °F Average	Temperature °F Departure	Precipitation Inches Total	Precipitation Inches Departure
AL BIRMINGHAM	46	-1	4.0	-0.7
MOBILE	54	0	1.5	-3.4
MONTGOMERY	51	1	2.9	-1.6
AK ANCHORAGE	18	0	0.2	-0.7
BARROW	9	29	0.3	0.1
FAIRBANKS	4	8	1.0	0.6
JUNEAU	24	-4	0.1	-3.7
KODIAK	33	2	1.4	-3.6
NOME	23	19	2.1	1.6
AZ FLAGSTAFF	32	1	1.4	-0.6
PHOENIX	62	6	T	-0.6
PRESCOTT	43	3	0.3	-1.2
TUCSON	58	4	0.2	-0.4
WINSLOW	40	2	0.3	-0.2
YUMA	61	1	0.0	-0.2
AR FORT SMITH	36	-6	5.5	3.0
LITTLE ROCK	37	-7	9.0	5.2
CA BAKERSFIELD	51	-3	0.8	-0.3
EUREKA	46	-3	2.9	-2.3
FRESNO	49	-2	1.2	-0.7
LOS ANGELES	55	-3	1.7	-0.8
REDDING	46	-5	1.1	-5.1
SACRAMENTO	47	-3	1.3	-1.6
SAN DIEGO	57	0	0.7	-1.0
SAN FRANCISCO	49	-3	1.3	-1.9
STOCKTON	48	-2	1.1	-0.9
CO DENVER	23	-11	0.7	0.0
GRAND JUNCTION	28	-6	1.3	0.8
PUEBLO	24	-11	0.8	0.5
CT BRIDGEPORT	31	1	2.4	-0.6
HARTFORD	29	1	1.9	-1.3
DC WASHINGTON	38	0	2.8	0.2
FL APALACHICOLA	59	4	2.0	-1.7
DAYTONA BEACH	62	3	0.6	-2.5
FT. MYERS	68	4	0.4	-1.7
JACKSONVILLE	58	2	1.8	-1.8
KEY WEST	72	2	0.3	-1.7
MIAMI	71	3	0.7	-1.3
ORLANDO	64	3	0.2	-3.0
TALLAHASSEE	56	3	2.9	-2.1
TAMPA	65	4	0.4	-2.6
WEST PALM BEACH	68	3	1.0	-1.6
GA ATHENS	48	3	3.2	-0.9
ATLANTA	47	2	4.3	-0.1
AUGUSTA	50	3	3.2	-0.8
MACON	51	2	4.6	0.1
SAVANNAH	56	4	0.7	-2.5
HI HILO	72	0	6.5	-6.9
HONOLULU	74	1	6.5	3.8
KAHULUI	72	0	5.4	2.1
LIHUE	72	1	11.3	7.7
ID BOISE	23	-13	1.2	0.1
LEWISTON	27	-12	0.3	-0.6
POCATELLO	19	-10	1.4	0.5
IL CAIRO	—	--	11.2	7.8
CHICAGO	20	-6	0.8	-0.4
MOLINE	17	-8	1.2	-0.1
PEORIA	19	-8	1.2	-0.2
QUINCY	19	-10	0.7	-0.7
ROCKFORD	16	-8	0.6	-0.6
SPRINGFIELD	20	-9	1.3	-0.4
IN EVANSVILLE	33	-2	7.0	4.0
FORT WAYNE	23	-3	1.1	-0.9
INDIANAPOLIS	27	-3	1.3	-1.1
SOUTH BEND	22	-4	1.1	-0.9
IA DES MOINES	15	-9	1.1	-0.1
DUBUQUE	14	-7	0.5	-0.8
SIOUX CITY	15	-8	0.4	-0.6
WATERLOO	13	-8	0.3	-0.7
KS CONCORDIA	22	-10	0.6	-0.3
DODGE CITY	25	-10	0.3	-0.3
GOODLAND	23	-9	0.1	-0.2
TOPEKA	23	-10	0.9	-0.2
WICHITA	28	-8	0.4	-0.5
KY BOWLING GREEN	35	-3	11.2	7.2
JACKSON	36	3	7.6	3.9
LEXINGTON	33	-2	10.1	6.9
LOUISVILLE	34	-2	9.0	5.8
LA ALEXANDRIA	51	-2	6.9	2.2
BATON ROUGE	54	0	1.5	-3.5
LAKE CHARLES	53	0	0.6	-2.7
NEW ORLEANS	56	1	0.2	-5.1
SHREVEPORT	46	-4	4.1	0.6
ME CARIBOU	11	-2	1.4	-0.7
PORTLAND	24	0	2.4	-1.2
MD BALTIMORE	36	2	3.4	0.4
SALISBURY	37	0	3.0	-0.3
MA BOSTON	30	0	2.5	-1.2
CHATHAM	31	0	3.5	-0.7
MI ALPENA	17	-2	0.6	0.7
DETROIT	24	-2	0.8	-0.9
FLINT	21	-3	0.5	-0.9
GRAND RAPIDS	20	-5	1.0	-0.5
HOUGHTON LAKE	16	-2	0.7	-0.6
LANSING	20	-3	0.7	-0.9
MARQUETTE	7	-7	1.6	-0.3
MUSKEGON	22	-3	1.0	-0.6
SAULT ST. MARIE	11	-3	1.8	0.1
MN ALEXANDRIA	2	-10	0.4	-0.3
DULUTH	3	-9	0.3	-0.6
INT'L FALLS	-2	-9	0.3	-0.4
MINNEAPOLIS	9	-9	1.0	0.2
ROCHESTER	9	-7	0.4	-0.3
ST. CLOUD	5	-9	0.6	-0.2
MS GREENWOOD	45	-2	7.7	3.2
JACKSON	48	-1	2.5	-1.7
MERIDIAN	49	0	3.1	-1.5
TUPELO	43	-2	9.9	5.4
MO COLUMBIA	23	-10	1.6	-0.3
KANSAS CITY	23	-11	0.6	-0.6
SAINT LOUIS	28	-6	1.4	-0.7
SPRINGFIELD	27	-9	2.0	-0.2
MT BILLINGS	14	-15	0.6	-0.1
GLASGOW	4	-12	0.6	0.3
GREAT FALLS	10	-17	1.2	0.5
HAVRE	7	-14	0.3	-0.1
HELENA	6	-20	0.8	0.4
KALISPELL	14	-13	1.3	0.3
MILES CITY	7	-15	0.4	-0.2
MISSOULA	16	-12	0.5	-0.3
NE GRAND ISLAND	17	-10	0.6	-0.2
LINCOLN	16	-10	0.8	-0.2
NORFOLK	15	-9	0.6	-0.2
NORTH PLATTE	18	-10	0.7	0.2
OMAHA	16	-11	0.6	-0.3
SCOTTSBLUFF	19	-12	1.0	0.7
VALENTINE	14	-10	0.7	0.2
NV ELKO	22	-9	0.9	0.1
ELY	24	-5	0.5	-0.2
LAS VEGAS	50	0	0.1	-0.4
RENO	31	-6	0.8	-0.1
WINNEMUCCA	28	-8	0.7	0.0
NH CONCORD	22	0	2.1	-0.4
NJ ATLANTIC CITY	34	0	3.5	0.2
NM ALBUQUERQUE	42	2	0.4	0.0
CLOVIS	36	-5	0.5	0.0
ROSWELL	44	0	0.5	0.2
NY ALBANY	24	0	1.6	-0.6
BINGHAMTON	22	-1	2.0	-0.3
BUFFALO	23	-2	2.5	0.2
NEW YORK	34	1	2.8	-0.2
ROCHESTER	22	-3	1.6	-0.8
SYRACUSE	23	-2	1.7	-0.9
NC ASHEVILLE	40	0	4.6	1.4
CHARLOTTE	46	3	4.7	0.9
GREENSBORO	40	0	4.5	1.1
HATTERAS	50	4	2.1	-1.9
NEW BERN	48	2	4.1	0.2
RALEIGH	43	1	6.4	3.0
WILMINGTON	50	3	2.6	-0.8
ND BISMARCK	6	-8	0.2	-0.2
FARGO	2	-10	0.2	-0.2
GRAND FORKS	0	-10	0.1	-0.4
WILLISTON	2	-13	0.4	-0.1
OH AKRON-CANTON	25	-2	2.1	0.0
CINCINNATI	31	-2	4.7	2.0
CLEVELAND	26	-2	1.7	-0.5
COLUMBUS	29	-2	3.1	0.9
DAYTON	27	-3	2.7	0.6
TOLEDO	24	-2	0.7	-1.1
YOUNGSTOWN	25	-1	1.9	-0.3
OK OKLAHOMA CITY	33	-8	2.2	0.9
TULSA	32	-9	2.3	0.5
OR ASTORIA	37	-7	6.6	-1.1
BURNS	18	-16	0.8	-0.2
MEDFORD	39	-4	0.8	-1.3
PENDLETON	25	-14	1.4	0.3
PORTLAND	36	-7	2.8	-1.1
SALEM	35	-8	2.8	-1.7
PA ALLENTOWN	30	1	2.2	-0.8
ERIE	25	-1	2.4	0.3
HARRISBURG	32	0	1.9	-0.8
PHILADELPHIA	35	1	3.3	0.5
PITTSBURGH	28	-1	3.4	1.0
SCRANTON	28	1	1.7	-0.3
RI PROVIDENCE	30	0	2.7	-1.0
SC CHARLESTON	55	5	0.9	-2.5
COLUMBIA	50	2	3.3	-0.7
FLORENCE	49	2	2.6	-0.8
GREENVILLE	45	2	4.9	0.6
SD ABERDEEN	5	-11	0.4	-0.2
SD HURON	8	-11	0.8	0.1
RAPID CITY	15	-11	0.3	-0.3
SIOUX FALLS	9	-10	0.5	-0.4
TN CHATTANOOGA	43	1	7.2	2.5
KNOXVILLE	41	0	6.3	2.1
MEMPHIS	40	-4	10.5	6.2
NASHVILLE	39	-2	9.4	5.4
TX ABILENE	40	-8	3.1	2.1
BRISTAL	40	2	4.1	0.7
AMARILLO	32	-7	0.6	0.0
AUSTIN	49	-4	0.9	-1.6
BEAUMONT	53	-2	0.2	-4.0
BROWNSVILLE	61	-2	0.1	-1.5
CORPUS CHRISTI	57	-1	1.0	-0.5
DEL RIO	52	-4	1.0	0.2
EL PASO	51	3	0.7	0.3
FORT WORTH	42	-6	3.7	1.9
GALVESTON	54	-2	0.2	-2.2
HOUSTON	53	-2	0.9	-2.4
LAREDO	58	-2	0.3	-0.9
LUBBOCK	38	-4	1.0	0.5
MIDLAND	43	-4	1.3	0.7
SAN ANGELO	45	-5	3.0	2.2
SAN ANTONIO	52	-3	0.3	-1.6
VICTORIA	54	-1	0.5	-1.8
WACO	45	-6	2.3	0.3
WICHITA FALLS	37	-8	3.5	2.5
UT CEDAR CITY	28	-6	0.3	-0.5
MILFORD	25	-7	0.6	-0.1
SALT LAKE CITY	25	-9	1.6	0.3
VT BURLINGTON	19	1	0.7	-1.0
VA LYNCHBURG	38	1	2.9	0.0
NORFOLK	44	2	5.8	2.5
RICHMOND	39	1	4.3	1.2
ROANOKE	38	0	2.0	-1.1
WA COLEVILLE	20	-11	1.5	0.0
QUILLAYUTE	35	-7	6.2	-6.0
SEATTLE-TACOMA	36	-7	3.5	-0.8
SPOKANE	22	-11	1.3	-0.3
YAKIMA	27	-9	1.3	0.6
WALLA WALLA	25	-16	1.4	0.0
WV BECKLEY	33	0	3.3	0.1
CHARLESTON	35	-1	6.1	3.0
ELKINS	30	0	3.8	1.0
HUNTINGTON	34	-2	8.7	5.8
PARKERSBURG	32	-2	4.7	2.1
WI GREEN BAY	13	-5	0.4	-0.6
LACROSSE	13	-7	0.4	-0.5
MADISON	15	-6	0.6	-0.4
MILWAUKEE	18	-5	0.7	-0.6
WAUSAU	10	-6	0.4	-0.5
WY CASPER	12	-15	1.4	0.8
CHEYENNE	18	-12	1.3	0.9
LANDER	10	-15	0.8	0.2
SHERIDAN	14	-12	0.5	-0.3
PR SAN JUAN	76	0	6.1	4.1

Heating Degree Days (Base 65°) For

February 1989

States and Stations	TOTAL	Depart
AL. Birmingham	560	28
Mobile	335	-7
Montgomery	413	-26
AK. Anchorage	1322	3
Barrow	1556	-813
Fairbanks	1722	-210
Nome	1183	-545
AZ. Flagstaff	915	-45
Phoenix	133	-136
Tucson	199	-88
Winslow	697	-48
Yuma	157	-19
AR. Fort Smith	797	164
Little Rock	774	189
CA. Bakersfield	399	64
Eureka	535	79
Fresno	452	46
Los Angeles	291	58
Redding	530	121
Stockton	480	68
San Diego	237	41
San Francisco	455	80
CO. Denver	1193	314
Pueblo	1145	311
CO. Bridgeport	945	-18
Hartford	1012	-35
DC. Washington	755	-15
FL. Apalachicola	206	-105
Jacksonville	231	-71
Key West	27	-10
Miami	49	-13
Orlando	119	-53
W. Palm Beach	66	-20
Tallahassee	276	-65
Tampa	116	-70
GA. Atlanta	490	-73
Augusta	411	-84
Macon	400	-52
Savannah	289	-98
ID. Boise	1166	357
Lewiston	1071	329
Pocatello	1292	298
IL. Chicago	1265	173
Moline	1326	209
Peoria	1290	220
Rockford	1364	199
Springfield	1242	248
Fort Wayne	1158	77
Indianapolis	1052	69
South Bend	1190	109
IA. Des Moines	1384	250
Dubuque	1416	192
Souix City	1387	217
KS. Concordia	1202	247
Dodge City	1105	265
Goodland	1180	253
Topeka	1174	264
Wichita	1044	207
KY. Lexington	887	36
Louisville	860	45
LA. Baton Rouge	357	15
Lake Charles	363	39
New Orleans	292	-26
Shreveport	535	97
ME. Caribou	1524	68
Portland	1141	-35

States and Stations	TOTAL	Depart
MD. Baltimore	792	-56
MA. Boston	959	-1
Chatham	942	-7
MI. Alpena	1342	26
Detroit	1138	40
Flint	1233	65
Grand Rapids	1263	107
Houghton Lake	1382	66
Lansing	1255	87
Marquette	1584	164
S. Ste. Marie	1502	82
MN. Duluth	1721	237
Internatl Falls	1858	245
Minneapolis	1576	246
Rochester	1555	211
St. Cloud	1689	253
MS. Jackson	495	33
Meridian	469	5
MO. Columbia	1164	253
Kansas City	1176	255
St. Louis	1029	155
Springfield	1049	243
MT. Billings	1441	416
Glasgow	1712	337
Great Falls	1529	457
Havre	1621	350
Helena	1650	558
Kalispell	1429	345
Miles City	1622	421
Missoula	1377	344
NE. Grand Island	1339	281
Lincoln	1359	281
Norfolk	1392	238
North Platte	1316	260
Omaha	1348	236
Valentine	1428	286
NV. Ely	1139	125
Las Vegas	425	8
Reno	944	171
Winnemucca	1051	231
NH. Concord	1182	-16
NJ. Atlantic City	867	-23
NM. Albuquerque	640	-77
NY. Albany	1133	-32
Binghamton	1199	6
Buffalo	1177	43
New York	854	-34
Rochester	1184	47
Syracuse	1175	27
NC. Asheville	698	-27
Charlotte	541	-78
Greensboro	685	-18
Hatteras	421	-122
Raleigh	623	-32
Wilmington	415	-83
ND. Bismark	1640	226
Fargo	1771	259
Williston	1752	341
OH. Akron-Canton	1106	48
Cinncinnati	949	28
Cleveland	1084	31
Columbus	1009	23
Dayton	1043	52
Toledo	1127	29
Youngstown	1119	24

States and Stations	TOTAL	Depart
OK. Okla. City	887	209
Tulsa	921	241
OR. Astoria	773	182
Burns	1309	427
Medford	742	109
Pendleton	1113	396
Portland	805	195
Salem	841	217
PA. Allentown	963	-37
Erie	1121	1
Harrisburg	912	-26
Philadelphia	840	-53
Pittsburg	1033	19
Scranton	1031	-39
RI. Providence	975	-25
SC. Charleston	312	-122
Columbia	435	-73
Greenville	543	-56
SD. Aberdeen	1684	304
Huron	1601	288
Rapid City	1414	322
Sioux Falls	1559	274
TN. Chattanooga	608	-36
Knoxville	660	2
Memphis	684	82
Nashville	721	32
TX. Abilene	690	211
Amarillo	909	198
Austin	464	117
Beamont	371	65
Brownsville	206	71
Corpus Christi	280	71
Del Rio	362	80
El Paso	375	-90
Fort Worth	630	161
Galveston	322	40
Houston	379	65
Lubbock	739	112
Midland	601	117
San Angelo	567	139
San Antonia	392	73
Victoria	335	67
Waco	562	147
Wichita Falls	772	220
UT. Milford	1129	208
Salt Lake City	1134	269
VT. Burlington	1265	-48
VA. Lynchburg	737	-36
Norfolk	601	-68
Richmond	709	-22
Roanoke	744	-15
WA. Quillayute	830	178
Seattle-Tacoma	807	185
Spokane	1205	292
Walla Walla	1131	451
Yakima	1073	264
WV Beckley	894	-22
Charleston	837	14
Huntington	845	27
WI. Green Bay	1451	129
Madison	1404	158
Milwaukee	1307	131
WY Casper	1484	417
Cheyenne	1332	332
Lander	1524	424
Sheridan	1411	322

National Agricultural Summary

February 27 - March 5, 1989

HIGHLIGHTS: Cool temperatures continued to slow winter wheat growth in portions of the central and southern Plains. Additional snow cover was received in the northern Plains. Snow cover was mostly adequate. Winter wheat was good in the Corn Belt. Small grains were good to fair in the Southeast and fair to good in the Delta. Cotton and sorghum planting began in Texas. Florida's citrus and vegetable producing areas received needed rain. Livestock was in mostly good condition. Pastures were mostly good to fair in the Delta and Southeast.

SMALL GRAINS: Cool temperatures continued to slow winter wheat growth in portions of the central and southern Plains. In Kansas, moisture was needed to promote growth. Winter wheat in Oklahoma was mostly fair. Some freeze damage occurred on heavily grazed fields. Cool temperatures have reduced insect activity. Cool temperatures late in the week slowed small grain growth in Texas. Additional snow cover was received in the northern Plains. Snow cover was fair to good in Montana. Winter wheat was fair to good. Wind damage remained light to moderate. Snow cover was mostly adequate in North Dakota. Small grains were in fair to good condition. Winter wheat was good in the Corn Belt. Small grains were mostly good to fair in the Southeast. Producers continued to fertilize as weather permitted. Small grains were mostly fair to good in the Delta.

OTHER FIELD CROPS: Rain limited fieldwork in the Delta and Southeast. Tobacco plant bed preparation and seeding continued as weather permitted. Corn planting began in southern Mississippi. In Texas, corn planting continued. Sorghum and cotton plantings began in the Rio Grande Valley and Coastal Bend areas. In Florida, corn planting continued and sugarcane harvest was nearly complete.

FRUIT AND NUTS: Florida's citrus producing areas benefited from needed rain. Early and midseason orange harvests slowed. Valencia and temple orange harvests were active. Grapefruit and valencia orange harvests continued in the Rio Grande Valley of Texas. In central and western Arizona, orange and grapefruit harvests continued. In California, stonefruit and almond orchards were blooming. Cold temperatures caused only minor damage to berry and nut crops in the Williamette Valley of Oregon.

VEGETABLES: Rain and warm temperatures benefited most of Florida's vegetable producing areas. Planting and harvest were active. Harvest volume leaders were tomatoes, cabbage, peppers, celery, potatoes, and strawberries. Potato digging was active in Dade County. Vegetable harvest continued in the Rio Grande Valley and the San Antonio-Winter Garden areas of Texas. Onion harvest was just beginning in the Rio Grande Valley. Wet soil conditions limited activity in the east. Some replanting may be necessary. Harvest and shipment of lettuce, broccoli, cauliflower, and other mixed vegetables continued in central and western Arizona. In California, artichoke and broccoli supplies were moderate and of variable quality in the Salinas area. Cauliflower supplies were very light. In the Santa Maria area, broccoli supplies were heavy and of good quality. Cauliflower supplies were light but of good quality. Celery harvest continued in the southern coastal area. Cold temperatures may have damaged vegetable crops in the Williamette Valley of Oregon. The extent of the damage was still unknown. Irish potatoes and cabbage seeding continued in North Carolina.

PASTURES AND LIVESTOCK: Livestock was in mostly good condition. Pastures were mostly good to fair in the Delta and Southeast. Snow and cold temperatures stressed newborn calves and lambs in portions of the northern Plains and the Northwest. Rain and warm temperatures improved rangeland conditions in California. Rain improved pasture conditions in Florida, but more was needed.

(Continued from front cover)

FRIDAY: The winter storm moved east, bringing near blizzard conditions to portions of the northern Plains and the Great Lakes. Snow accumulations ranged from 4 to 8 inches with locally heavy amounts of 14 inches in Minnesota. The cold air associated with this system kept the North Central United States cold and triggered thunderstorms in the central and southern Plains. Scattered rain showers still persisted along the Gulf Coast and the mid-Atlantic States.

SATURDAY: Snow from the late-season winter storm pushed from the Dakotas southward into the south-central Plains. Ahead of the cold front, heavy rain and thunderstorms occurred in the lower Mississippi Valley, with several tornadoes being reported in Louisiana. Freezing rain stretched from Oklahoma to lower Michigan and also in parts of New England. A storm system off the Pacific Coast pelted the Northwest with high winds and rain. Several low-temperature records were broken in Montana and Wyoming.

(Continued from p. 19)

WISCONSIN: Cold 12°. Extremes -25°; 45°. Precipitation 0.20 to 1.10 in. Snowfall 2 to 4 in. north 27th, 15 in. north, central 3rd, 6 to 8 in. south 2nd and 3rd.

Freezing rain left ice covering fields south.

WYOMING: Temperatures above normal far northwest, below normal elsewhere. Precipitation above normal.

Increased snow cover over much of winter wheat area. Livestock fair to good with supplemental feeding. Calving, lambing, shearing underway. Colder temperatures, snow increased stress on newborn calves, lambs.

State Summaries of Weather and Agriculture

These summaries provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by NASS State Statistical Offices in cooperation with the National Weather Service.

ALABAMA: Rainfall 2.00 to 4.00 in. northern half; near 8.00 in. local areas; 1.00 to 3.00 in. central, south; over 4.00 in. local areas. Temperatures 1 to 2° above normal northern half; 2 to 5° above normal central, south.

Soil moisture 18% short, 29% adequate, 53% surplus. Acreage intended for spring planting 20% prepared. Fieldwork progress 17% behind normal, 74% normal, 9% ahead of normal. Winter wheat 53% fair, 42% good, 5% excellent. Livestock, pastures fair to good. Primary activities: Maintenance, repair of equipment; pruning, fertilizing, spraying fruit trees; planting early vegetable; topdressing winter wheat; soil testing; planting pine trees; providing supplemental feed; preparing tax, farm planning; routine care of livestock, poultry.

ARIZONA: Sunshine, unseasonably warm 26th to 1st. Rainfall, cooler temperatures 2nd. Cold front, gusty 35 to 45 mph winds 3rd. Light rain lower elevations; 2 to 12 in. snow north, northeast. Clear skies, cool air 4th. Temperatures normal to 7° above.

Cotton field preparation active; furrowing, preplant herbicide, pesticide applications, pre-irrigation. Wheat, barley progressed well; 55% jointing, 5% heading. Development ahead west; almost 15% heading. Fields still being monitored for Russian wheat aphids, no infestations known. First cuttings alfalfa continued west, fields clipped for weed control. First cuttings alfalfa expected soon, central. Producers continued monitoring Egyptian alfalfa weevil. Valencia oranges, grapefruit harvest west, central. Harvest, shipping head lettuce, broccoli, cauliflower, boston, leaf, romaine lettuce; cabbage, kale, napa, escarole, bok choy, endive, celery, spinach, anise, asparagus, greens, rapini, green onions, parsley, beets, turnips, leeks, carrots continued west, central.

ARKANSAS: Cold, several rainy days. Sleet, snow weekend, up to 12 in. snow northwest. Temperature extremes 18°; 70°. Rainfall 0.81 to 3.99 in.

Soil moisture adequate to surplus. Some wheat fertilization. Cattle good. Feed adequate. Few chicken houses collapsed due to weight of ice, snow.

CALIFORNIA: High pressure brought dry weather until 29th. By 1st, storm moved through dropping moderate amounts rain, snow higher elevations. Temperatures mild side.

Recent rains benefited small grains. Overall soil moisture adequate but water for irrigation remained low. Weed treatment all grain ongoing. Winter wheat plantings tillered, beginning to elongate. Some wheat boot stage. Alfalfa fields south showing good growth. Early cutting expected fields east, west, just beginning grow. First cutting of desert hay expected soon yield, quality good. Routine cultural practices, dormant spraying active. Stonefruit, almond orchards blooming. Citrus packed. Artichokes moderate supplies, variable quality Salinas. Broccoli moderate supply, variable quality Salinas; heavy supply, good quality Santa Maria. Cauliflower fairly light supply, good quality Santa Maria; very light supply Salinas. Celery harvest continued south coast. Rangeland, pastures benefited from rain, warm temperatures, more rainfall needed. Livestock fair to poor. Supplemental feeding heavy some areas. Livestock movement light.

COLORADO: Continued warming pattern across State through midweek. Arctic air primarily east of continental Divide moved in 3rd, continued through weekend. Temperatures above normal west of Divide, Rio Grande River Basin; near normal Arkansas Basin, below normal across Platte, Kansas River Basins. Precipitation limited to weekend amounts less than 0.50 in. most sites less than 0.25 in.

Winter wheat very little additional moisture or snow cover from weekend storm but cooler temperatures kept crop from breaking dormancy. Cold, blowing snow caused some stress to new born animals.

FLORIDA: Nearly all areas significant rains, 1.00 to 2.00 in. common. Rain 2.00 to 4.00 in. Peninsula; isolated amounts exceeded 5.00 in. Warm, temperatures 5 to 10° above normal. Maximum readings 80s common; some low 90s Peninsula. Coldest mostly 40s, 50s, some 60s lower southeast coast.

Soil moisture continued short, except adequate few widely scattered areas. Rains beneficial, but more needed. Tobacco growers started setting plants. Corn planting, working ground for spring sown crops active. Sugarcane harvest winding down. Permanent pastures need additional recovery time from last weeks cold, but weekend had begun some new growth. Earlier cold also set back temporary winter pastures. Rains, warmer temperatures aided recovery, however; conditions mostly poor to fair Panhandle, lower southern, extreme northern Peninsula, mostly very poor elsewhere. Cattle continued good to mostly fair. Rains, citrus areas beginning midweek. Some foliage damage from cold temperatures, 24th to 26th; very little, if any, fruit damage. Early, midseason orange harvest slowed. Valencia movement increased. Temple harvest continued active. Caretakers hedged, topped, cultivated. Temperatures warmed to above normal over major vegetable producing areas. Rain, varying amounts, midweek. Planting, replanting active. Harvest activity variable. Volume leaders: Tomatoes, cabbage, peppers, celery, potatoes, strawberries, lettuce, carrots, snap beans. Also available good volume: Squash, cucumbers, radishes, sweet corn, eggplant, escarole, endive. Digging Dade County potatoes active.

GEORGIA: Warm, wet; temperatures 2 to 4° above normal, except extreme south 8 to 10° above normal. Extreme lows 30° northeast mountains, low 40s central, mid to upper 40s south. Extreme highs low, mid 60s north, mid and upper 80s south. Rainfall 4 to 6 days except southeast 3 to 5 days; amounts 1.00 to 3.00 in. north, local areas over 7.00 in.; central, south 1.00 to 3.00 in.; southeast below 1.00 in.

Soil moisture surplus north, north central; adequate elsewhere. Rain improved soil moisture levels. Tobacco plants good. Small grains mostly fair to good. Minor damage to wheat jointing stage from last weeks cold temperatures. Pastures poor to good, mostly fair. Cattle, hogs fair to mostly good. Rain limited most field activities. Some land preparation still ahead of average, small grain topdressing.

HAWAII: Showery, windy after couple of days clear. Light to heavy rains most week. Heaviest down pours windward, on islands western half of State. Blustery southerly winds 10 to 25 mph, locally strong over 50 mph. Temperatures mid 60s

to low 80s. Rainfall 0.80 to 9.20 in. Winds southerly 10 to 30 mph.

Days suitable for fieldwork 7.0. Fieldwork slowed by muddy conditions. Crop yields expected to be below normal due to 2 consecutive weeks of inclement weather. Head cabbage output steady, good quality. Chinese cabbage production moderate, shipments to mainland continued. Overall tomato production higher. Head lettuce production very light, disease plagued fields. Banana output seasonally light, many trees suffered leaf shredding due to gusty winds. Papaya production seasonally low. Ginger root harvesting remained very active. Sugarcane harvesting hampered along eastern coast island due to ban on burning because of presence of volcanic fumes. First watermelon harvest of year expected this month.

IDAHO: Temperatures 2 to 10° below normal southwest, Panhandle. Rest of State near normal. Most above normal precipitation.

Cold, wet caused problems with calving. Lambing near completion several areas. Some shearing. Most livestock good. Hay, roughage short, adequate. Large amounts of straw used for feed, bedding. No fieldwork completed due to wet fields. Other farm activities included marketing farm products, equipment maintenance, attending meetings, preparing taxes, planning spring work.

ILLINOIS: Temperatures 3 to 6° below normal north, 1 to 3° below normal south. Precipitation 0.30 to 1.00 in. west central, over 1.00 in. northwest, 1.00 to 3.00 in. south.

Winter wheat mostly good. Snow cover parts of State provided some insulation. Livestock good to excellent.

INDIANA: Temperatures 3 to 6° below normal north, normal elsewhere. Highs 50s to low 60s, lows in teens. Precipitation 0.20 to 2.50 in. most areas.

Field activities limited. Soil moisture improved. Other activities: Hauling corn, soybeans, manure; topdressing wheat, spreading fertilizer, attending meetings, tax preparation, purchasing supplies, seed cleaning, farm program sign-up, repairing equipment, care of livestock. Livestock good. Wheat mostly good. Hay short to adequate.

IOWA: Temperatures 6 to 14° below normal; extremes 48° 3rd Lamoni to -5° 6th Sioux City. Precipitation much above normal northeast to below normal south third; 0.11 to 1.24 in., average 0.50 in.

Livestock mostly good. Snow, ice north limited field grazing. Wind erosion minimal due to ice on plowed fields.

KANSAS: Temperatures 10° below normal, northwest 13° below, southeast 5° below. Precipitation generally light, but moderate east central, southeast. Heaviest 0.88 in. Chanute, 0.57 in. Topeka.

Days suitable for fieldwork 2.5. Topsoil moisture 69% short, 20% adequate, 11% surplus. Subsurface moisture 78% short, 22% adequate. Much concern over extent freeze damage from sub-zero February weather. Most wheat stands survived, showing signs greening up, recovering. Essentially all top growth frozen back but extent of winterkill, thinning of stands not known. Moisture supplies inadequate to promote much regrowth. Little wind erosion but most stands extremely susceptible.

KENTUCKY: Temperatures cold early 2 to 5° above normal. Coldest mid teens to mid 20s, warming to 70s many areas. Dry until cold front 4th brought substantial rains over west, east 1.00 to 4.00 in. Heaviest west, lightest southeast. Normal rainfall just under 1.00 in.

Soil moisture ample to surplus. Winter grains greened, limited growth. Some fertilizing, but soils generally too soft. Burley tobacco markets closing, sales equal to production estimates. Dark fired tobacco 90 to 95% sold. Tobacco seedbeds will be prepared as weather permits. Livestock satisfactory, wet weather stressed newborn calves.

LOUISIANA: Temperatures 1° below normal to 3° above normal. Extremes 29°; 83°. Rainfall 0.55 to 3.11 in.

Days suitable for fieldwork 2.4. Soil moisture 9% short, 23% adequate, 68% surplus. Corn none planted, 1% 1988, 3% avg. Wheat 1% headed, none 1988, none avg.; good growth, minor freeze damage, poor development in poorly drained areas, fertilizing by air, scouting activities for disease. Flooding rice field for planting preparation. Weed control activities in sugarcane. Strawberry harvesting. Minor freeze damage to fruits, vegetable.

MARYLAND & DELAWARE MARYLAND: Precipitation 0.19 in. Temperature 34°, normal 38°. Temperature extremes 2°; 52°.

Main farm activities caring for livestock, maintaining machinery.

DELAWARE: Precipitation 0.13 in. Temperature 33°, normal 39°. Temperature extremes 11°; 49°.

Main farm activities caring for livestock, maintaining machinery.

MICHIGAN: Temperatures 4 to 16° below normal. Temperature extremes -22°; 55°. Precipitation 0.08 to 1.04 in.

Adequate snow depth benefiting winter wheat. Activities: Cold weather slowed outdoor work. Livestock normal. Feed adequate. Readying for spring planting, protecting water pipes, marketing livestock, crops.

MINNESOTA: Temperatures 12 to 19° below normal. Extremes -35°; 32°. Precipitation 0.04 to 0.11 in. above normal. Precipitation 0.21 to 1.03 in. Greatest weekly total 1.54 in. Snowfall 2 to 18 in. Snow depth 11 to 31 in. Major winter storm dumped heavy snowfall most State. Temperatures continued well below normal. Precipitation welcomed by all, rain would be even more welcomed this time of year.

Hay supplies continued to be tight.

MISSISSIPPI: Near normal temperatures, rainfall 1.21 in. above normal. Average rainfall 2.51 in.; maximum weekly rainfall 7.15 in. Temperature 1° above normal. Extremes 20°; 80°.

Days suitable for fieldwork 0.7, 3.3 1988, 3.0 avg. Soil moisture 20% adequate, 30% surplus, 50% excessive; mostly excessive central, north. Some flooding northern counties. Corn, watermelon planting began southern counties. Wheat 5% very poor, 5% poor, 60% fair, 30% good. Early planted wheat possibly damaged by recent freezes, late planted wheat ok. Rust 2 southern counties. Pastures, livestock good to fair. Activities: Some tillage, topdressing early week. Mostly too wet for anything except livestock feeding, equipment repair, paper work.

MISSOURI: Temperatures 3 to 4° below normal. General rain most areas, heavy south. Heavy snow, 7 to 16 in. in 100 mile swath Joplin to St Louis, less elsewhere.

Topsoil moisture 40% short, 45% adequate, 15% surplus. Subsoil moisture 67% short, 25% adequate, 8% surplus. Northern areas still short of moisture, southeast mostly surplus. Wheat 4% very

poor, 19% poor, 55% fair, 22% good, northwestern counties poorest. Hay 10% very short, 44% short, 41% adequate, 5% surplus. Livestock water 20% critically short, 30% short, 50% adequate, shortest northwest, north central. Livestock 1% poor, 28% fair, 68% good, 3% excellent.

MONTANA: Arctic air pushed temperatures 13 to 15° below normal west; 16 to 23° below normal rest of State. Snow across entire State. Southwest, central, south central 0.70 in. moisture.

Topsoil moisture 55% short, 40% adequate, 5% surplus. Subsoil moisture 80% short, 20% adequate. Winter wheat 15% poor, 55% fair, 30% good. Snow cover protection 55% fair, 30% good, 15% excellent. Wind damage to winter wheat to date 50% light, 35% moderate, 15% heavy. Livestock supplemental feed. Calving 25%, lambing 15%.

NEBRASKA: Very cold, stormy. Widespread snow, freezing rain. Precipitation 0.10 to 0.50 in. Temperatures 10 to 25° below normal. Extremes -24°; 42°.

NEVADA: Mild, southwest flow pattern brought spring like weather early week. Warming trend produced pleasant weather but only light, scattered precipitation. Cooler air mass middle week brought gusty winds, lower temperatures, much needed precipitation north, central areas. Precipitation most substantial northeast. Unfortunately extreme south storm produced gusty winds, little or no rain. Skies cleared again weekend.

Scattered showers, gusty winds delayed fieldwork midweek. Light precipitation not adding enough to yearly water supply.

NEW ENGLAND: Precipitation (rainfall, water equivalent of snow) trace to less than 0.66 in. Maine, New Hampshire, Vermont, trace to less than 0.50 in. south. Temperatures teens north to low 30s southern coast. Temperatures 4 to 8° below normal.

Major farm activities: Tending livestock, machinery maintenance. Scattered sap runs for maple; producers currently tapping, preparing facilities for production.

NEW JERSEY: Temperatures slightly below normal, 32° north, 34° south, 37° coastal. Extremes 13°; 49°. Precipitation below normal, 0.49 in. north, 0.37 in. south, 0.61 in. coastal. Heaviest 24-hour total 0.72 in. on 5th, 6th. Heaviest 24-hour snowfall 2 in. on 5th, 6th. Depth of snow on ground 6th 2 in. north, 1 in. central.

Farmers caring for livestock, fruit pruning, repairing machinery.

NEW MEXICO: Winter storm hit State latter part of week; most areas some precipitation.

Days suitable for fieldwork 6.3. Soil moisture 67% short, 33% adequate. Irrigated wheat 11% very poor, 56% fair, 33% good; dryland wheat 25% very poor, 50% poor, 25% fair. Additional moisture needed. Cattle 40% fair, 60% good. Sheep 17% fair, 83% good. Ranges 18% poor, 55% fair, 27% good.

NEW YORK: Rather cold, most action western area. Temperatures well below zero Adirondacks morning 26th. Piseco Lake 20° below, Newcomb 19° below. Strong western wind, low temperatures caused heavy lake effect snow east of Lake Ontario on 27th. Barnes Corners 20 in., broad band 5 to 10 in. snowfall Tug Hill area, south west Adirondacks. Temperatures moderated bit on 28th but cold air returned by midweek. North, western area 20° 2nd, St. Lawrence Valley remained in teens 3rd. Freezing rain hit Niagara Frontier 4th; mercury shot up to low 50s as warm air moved in from Ohio Valley. St. Lawrence Valley 2 in. snow, changed to freezing rain, heavy glaze. Water equivalent equaled 0.50 in. St Lawrence Valley, far northern Adirondacks 4th.

Maple producers enjoyed an early sap run few areas of State. First run end of first week in March. Producers preparing for upcoming maple season. Other activities included caring for livestock, machinery maintenance, attending meetings.

NORTH CAROLINA: Temperatures 2° below normal to 1° above normal. Temperature extremes 13°; 69°. Precipitation 0.47 to 3.77 in.

Days suitable for fieldwork 1.2. Soil moisture 4% short, 48% adequate, 48% surplus. Pasture 14% poor, 33% fair, 52% good, 1% excellent. Oats 3% poor, 28% fair, 69% good. Barley 2% poor, 28% fair, 70% good. Rye 3% poor, 27% fair, 70% good. Wheat 2% poor, 26% fair, 72% good. Tobacco plant beds 2% poor, 39% fair, 59% good. Feed grains 1% very short, 8% short, 91% adequate. Hay, roughage 5% short, 93% adequate, 2% surplus. Irish potatoes 13% planted, 22% 1988, 18% avg. Cabbage 24% planted, 26% 1988. Major farm activities: General maintenance; equipment repair, tending livestock. Other activities: Preparing land for planting; topdressing small grains; pruning fruit trees; tending tobacco plant beds.

NORTH DAKOTA: Below normal temperatures statewide, snowstorm southeast 3rd. Temperatures 14 to 21° below normal. Extremes -28° north central; 31° southeast. Precipitation 0.07 in. north central to 0.66 in. southeast.

Soil moisture below normal. Snow depth 2 in. southwest to 23 in. northeast. Winter seedings mostly fair to good; 81% sufficient snow cover for winter wheat, 86% rye, 88% alfalfa. Livestock mostly fair to good, supplemental feeding. Calving 14%, lambing 25%, shearing 39%. Cold weather forced ranchers to provide special care for young livestock and to feed higher amounts of already tight hay, roughage. Pastures 7% open for grazing.

OHIO: Cold early, late period; abnormal warming 3rd, 4th. Major winter storm brought snow, ice. Daily lows mid 20s to low 30s, highs upper 30s to low 40s. Highest readings mid 50s to 70s 3rd, 4th. Precipitation, water equivalent 0.30 to 2.80 in.; lighter amounts north, heavier south.

Some snow cover central, south. No cover over major wheat area northwest. Some power outages south from ice storm.

OKLAHOMA: Temperatures 9° below normal south central, 4° below normal southeast. Precipitation 0.09 in. north central to 1.94 in. east central.

Topsoil moisture 5% short, 70% adequate, 25% surplus. Subsoil moisture 25% short, 75% adequate. Wheat 20% poor, 65% fair, 15% good. Cold weather, snow caused crop dormancy. Freeze damage on heavily grazed wheat pasture. Insect activity greatly reduced. Cattle good to fair; marketings average, prices stable.

OREGON: Cold air from northern polar areas caused temperatures to fall below normal. Greatest departures 10 to 14° below normal northeast. Elsewhere temperatures 4 to 9° below normal. Only trace amounts of precipitation until 2nd when storm brought snow to entire State. Precipitation over 1.00 in. on coast; slightly less 1.00 in. Willamette Valley, southwest; less 0.50 in. east.

Soil moisture short to adequate east, adequate to surplus west. Minimal fieldwork. Winter wheat damage due to cold appears limited, some spring replanting planned. Bud damage to tree fruits probably only thinned crop, but hardest hit areas may have no margin for spring frost problems.

Cranberry beds south coast snow covered during coldest period, little injury observed. Berry, nut crops suffered only minor damage most areas of Willamette Valley. Overwintering vegetables suffered freeze damage, extent not known. Livestock fair eastern high country; mostly good lower elevations, west. Range, pasture snow covered over much of east; poor to fair elsewhere. Many hay growers nearly sold out, particularly Klamath Basin. Calving, lambing losses greater than normal.

PENNSYLVANIA: Temperatures about normal, drier than normal. General rain on first day of week. Temperature 30°, 1° above normal. Temperature extremes 4°; 65°. Precipitation 0.24 in., 0.43 in. below normal.

Activities: Hauling manure; caring for livestock; maintaining machinery; fixing fences; grading potatoes; cutting firewood.

PUERTO RICO: Island rainfall 0.89 in., 0.35 in. above normal. Highest weekly rainfall 3.51 in Arecibo. Highest 24-hour 2.76 in. Morovis. Total rainfall since January 1st 7.15 in., 27% above normal. San Juan WSFO temperature 77°, 1° below normal. Total rainfall 1.25 in., 0.76 in. above normal. Divisional temperature 76 to 78° on coasts, 71 to 72° interior. Station temperature 81° San Juan City to 62° Pico Del Este-Luquillo. Lowest minimum temperature 45° Adjuntas Aes. Highest maximum temperature 91° San Sebastian.

SOUTH CAROLINA: Temperatures near normal western half of State, slightly above normal east. Precipitation 1.00 to 3.00 in.

Farm activities: Topdressing wheat, corn planting preparation, maintenance; some replanting of tobacco beds.

SOUTH DAKOTA: Temperatures 10 to 20° below normal. Extremes -21°; 51°. Snow over State most week. Precipitation northwest 0.25 in.; east central 1.00 in. Most State 0.50 to 0.75 in.

Snow cover generally 6 to 10 in. central, east; less than 6 in. elsewhere. Some fields severely drifted but other have little cover.

TENNESSEE: Precipitation north of stationary front 27th mainly snow, heaviest north middle, 6.00 in. Dry weather remainder week, temperatures normal. Cold front west 4th produced heavy weekend rain. Stations except Bristol above normal precipitation, west 1.00 in. above normal, middle 1.00 to 2.00 in. above normal, southeast over 3.00 in. Flooding middle 5th.

Fieldwork minimal, very soggy conditions. Small grains fair to mostly good, growing well. Pastures fair to good. Cattle, hogs fair to mostly good. Main activities: Land preparation where possible, small grain fertilizing, livestock maintenance.

TEXAS: Chilly weather occurred. Early week cool front pressed south, moist winds overran cool surface air, caused extensive cloudiness, light spotty rains. Upper air disturbance triggered thunderstorms southeast. Milder temperatures returned 3rd. Weekend Arctic front pushed through State. Snow northeast, north central light snow flurries south central, west. Cooler than average temperatures prevailed. Temperatures Lower Valley normal. Precipitation generally light, conditions drier than normal. Northwest about normal, south below normal. East above normal.

Crops: Small grains began showing good signs recovery with milder, open weather during, colder temperatures 3rd, over weekend halted any improvement. Producers fertilized some fields Blacklands ahead of cold front. Many fields east drying; most too wet to fertilize. Some growth, greening Plains, many still remained short. Low Plains, Cross-Timbers, livestock taken off fields intended for grain harvest. Corn planting increased Coastal Bend, Rio Grande Valley. Planting continued Upper Coast as conditions allowed. Planting beginning parts central, Blacklands. Corn 6% planted, 19% 1988, 13% avg. Grain sorghum planting began earnest Valley, Coastal Bend with milder weather during early, midweek. Sorghum 4% planted, 4% 1988, 7% avg. Cotton planting just beginning Valley, Coastal Bend.

Commercial Vegetables: Rio Grande Valley carrot, celery, cabbage harvest continued. Onion harvest beginning. Melons emerging. Harvest valencias, grapefruit continued. Some irrigation occurred. San Antonio-Winter Garden harvest continued most vegetables. Onions good progress. East fields too wet for much activity. Replanting may be necessary. High Plains most land preparation completed before colder. Planting should begin soon. Trans-Pecos transplanting onions underway. Land preparation cantaloups, peppers continued until late week. Peach producers continued pruning, dormant oil applications. Cold weather not expected to cause serious damage.

Range and Livestock: Ranges, pastures showing improvement, colder temperatures probably slow progress. Feeding livestock continued steady. Small grains still providing little forage Plains. Livestock markets active good prices.

UTAH: Precipitation light central, moderate north, south. Temperatures 3 to 10° above normal.

Snow cover on fall seeded grains mostly gone. Winter range feed varied widely. Scattered supplemental feeding on winter ranges continued. Major farm activities included livestock chores, planning new crop, seed, fertilizer purchasing, equipment maintenance, machinery repair, farm records.

VIRGINIA: Mostly cloudy, light rain, drizzle. Precipitation light, 1.07 in. east, 0.64 in. central, 0.25 in. or less elsewhere. Temperatures up to 8° below normal. Range 6 to 65°.

Days suitable for fieldwork 1.4. Topsoil moisture 18% short, 34% adequate, 48% surplus. Wheat 5% poor, 28% fair, 66% good, 1% excellent. Peaches 19% poor, 57% fair, 24% good. Seeding tobacco beds, overseeding clover grasses, limited topdressing small grains. Livestock mostly good.

WASHINGTON: Temperatures 4 to 8° below normal west; 3 to 12° below normal east. Precipitation 0.33 to 1.09 in. west; none to 0.53 in. east.

Days suitable for fieldwork 1.2. Soil moisture 55% short, 45% adequate. Range, pasture 63% short, 37% adequate. Hay, other roughage 60% adequate, 40% surplus. Crop damage due to cold Benton, Adams, Lincoln Counties. Reseeding some winter cereal acreage expected. Snow cover improved some areas. Alfalfa fertilization, herbicide application in progress Grant County. Pruning caneberries, blueberries, apples, stonefruits continued. Some concern that winter feed may be short if cold continues.

WEST VIRGINIA: Weather Service unable to supply temperature, precipitation data due to workload created by localized flooding.

Days suitable for fieldwork 2.9. Soil moisture 5% very short, 20% short, 70% adequate, 5% surplus. Wheat, barley good to fair. Livestock good to fair. Feed 20% short, 77% adequate, 3% surplus. Farm activities: General farm maintenance, calving and lambing, pruning fruit trees, spreading manure.

(Continued to p. 15)

International Weather and Crop Summary

February 26 - March 4, 1989

HIGHLIGHTS

WESTERN USSR ... Widespread significant precipitation accompanies continued unseasonably warm weather.

EUROPE ... Beneficial rains continue across much of the south.

SOUTH ASIA ... Dry, seasonably warm weather covers India's filling to maturing winter wheat.

EASTERN ASIA ... Heavy rain and snow help alleviate dryness in the North China Plain. Mostly dry, mild weather favors progress in early crop rice planting across the south.

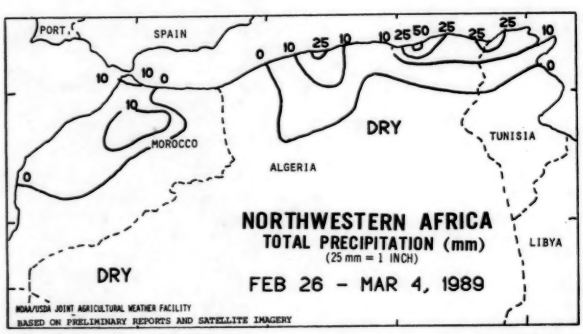
SOUTHEAST ASIA ... Local inundating rain persists over northern Java, eastern Malaysia, and the east-central Philippines.

SOUTH AMERICA ... Substantial rain continues to moisten Argentina's topsoils, stabilizing conditions for immature crops. Rain maintains ample moisture for soybeans in south-central Brazil, but dry weather is needed for harvesting.

AUSTRALIA ... Light to moderate rain benefits filling summer crops in southern Queensland.

SOUTH AFRICA ... Much needed drier weather helps to dry fields. Corn is mostly in the filling stage.

NORTHWESTERN AFRICA ... Minimal rain and above-normal temperatures cover winter grains in the jointing stage.



NORTHWESTERN AFRICA ... Following last week's beneficial rainfall, generally dry weather returned to winter grain areas in Morocco. In Algeria and Tunisia, minimal rain (precipitation less than 5mm) covered southernmost winter grain areas, while greater amounts (around 10mm) fell over northern crop areas. Localized precipitation (amounts greater than 25mm) fell over the extreme northern fringe of the crop area. Weekly average temperatures were 2-4 degrees C above normal over most of the region, increasing evapotranspiration rates. Winter grains usually enter the highly weather sensitive reproductive phase in mid-March when widespread precipitation will be needed to meet increasing crop moisture requirements.

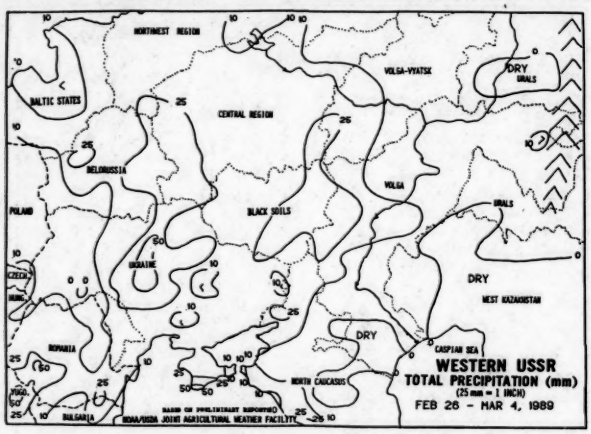
MONTHLY DATA FROM SELECTED FOREIGN CITIES
CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA
*** = DATA NOT AVAILABLE

February 1989

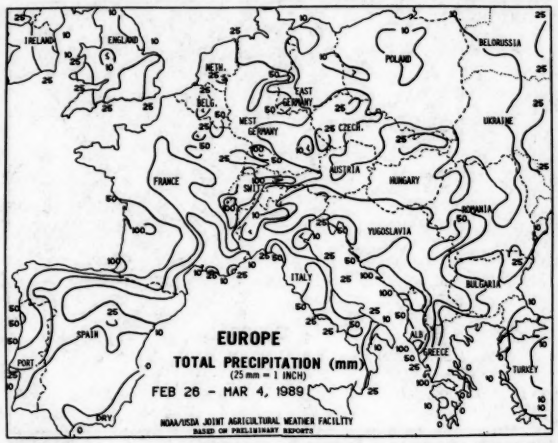
COUNTRY	CITY	TEMPERATURE (C) AVG MAX	AVG MIN	HI MAX	LO MIN	DPART AVG	DPART F/NRM	PRECIPITATION (MM) TOTAL	DPART F/NRM
NORWAY	OSLO	4	-1	10	-9	1	9.0	85.0	38.1
SWEDEN	STOCKHOLM	5	0	10	-10	3	5.9	21.6	-7.4
FINLND	HELSINKI	3	-2	8	-11	0	7.1	87.6	53.7
U KING	GLASGOW	8	3	12	-3	6	1.3	158.3	70.2
	EDINBURGH	8	3	14	-5	5	2.2	71.0	29.9
	BIRMINGHAM	9	3	13	-4	6	2.3	54.1	5.5
	LONDON	10	3	14	-4	6	2.2	72.2	19.5
IRELND	DUBLIN	10	5	13	-1	7	2.2	42.7	-8.5
ICELND	REYKJAVIK	-1	-6	5	-13	-3	-3.7	100.3	29.2
DENMRK	COPENHAGEN	7	3	11	-2	5	4.6	14.5	-24.6
LUXEMB	LUXEMBOURG	4	0	12	-6	2	0.4	50.6	-9.4
SWITZL	ZURICH	6	1	14	-4	4	2.7	67.9	-11.9
	GENEVA	7	1	17	-3	4	1.3	70.1	-10.0
FRANCE	PARIS	9	2	14	-2	5	1.1	29.1	-16.7
	STRASBOURG	5	1	10	-4	3	0.6	27.4	-8.0
	BOURGES	9	0	15	-6	5	0.2	25.1	-32.8
	BORDEAUX	13	2	16	-2	7	0.9	79.6	-6.5
	TOULOUSE	13	1	15	-3	7	0.8	72.6	20.4
	MARSEILLE	14	3	17	-2	9	1.3	32.4	-22.7
SPAIN	VALLADOLID	13	1	18	-3	7	1.4	29.0	-7.5
	MADRID	14	2	19	-5	8	1.4	23.7	-26.7
	SEVILLE	20	9	24	5	14	2.4	5.6	-77.5
E GRMY	LEIPZIG	7	1	15	-3	4	3.8	25.2	-6.1
	DRESDEN	8	2	14	-3	5	5.3	39.0	3.0
W GRMY	HAMBURG	8	3	13	-1	5	4.6	36.6	-3.6
	BERLIN	8	2	14	-2	5	4.5	37.6	4.5
	DUSSELDORF	9	3	14	-2	6	3.5	52.7	-0.4
	STUTTGART	7	0	15	-7	3	2.7	31.5	-15.3
	NURNBERG	6	1	13	-5	3	2.8	25.2	-14.5
	MUNICH	6	-1	13	-7	3	3.3	45.8	-8.7
AUSTRI	VIENNA	8	1	16	-5	5	4.3	16.3	-13.7
	INNSBRUCK	9	-1	14	-5	4	3.5	61.9	21.1
CZECH	PRAGUE	6	1	13	-5	3	4.1	21.9	1.0
POLAND	WARSAW	7	2	15	-7	4	6.8	17.5	-7.1
	LODZ	7	2	15	-4	4	6.1	24.2	-6.8
	KATOWICE	7	1	16	-6	4	5.8	21.0	-15.1
	PRZEMYSL	6	1	16	-4	4	5.6	21.2	-10.5
HUNGAR	BUDAPEST	7	2	18	-4	4	3.4	14.4	-17.4
YUGOSL	SARAJEVO	8	-1	20	-7	4	5.0	39.4	-26.6
ROMANI	BUCHAREST	9	-1	20	-8	4	4.7	7.3	-30.1
BULGAR	SOFIA	9	-1	20	-9	4	2.3	4.1	-34.0
ITALY	MILAN	11	1	17	-23	6	2.1	53.5	-13.2
	VERONA	11	0	16	-21	6	1.5	44.4	-6.2
	VENICE	10	2	17	-11	6	1.2	32.5	-24.8
	GENOA	15	9	19	5	12	3.1	97.8	6.9
	ROME	15	4	17	-5	9	0.3	6.4	-63.1
	NAPLES	16	4	20	-1	10	1.4	46.6	-47.2
GREECE	THESSALONIKA	13	2	21	-4	7	0.4	0.4	-36.7
	LARISSA	14	0	24	-9	7	-0.1	2.4	-35.7
	ATHENS	14	7	18	1	11	-0.7	2.2	-33.8
TURKEY	ISTANBUL	10	4	17	-2	7	1.4	18.3	-51.7
	ANKARA	5	-7	16	-16	-1	-1.7	16.1	-13.9
CYPRUS	LARNACA	16	6	21	1	11	-0.8	26.6	-34.4
USSR	TALLINN	4	-1	9	-8	1	7.3	57.4	32.6
	LENINGRAD	2	-1	10	-9	1	8.1	29.3	-1.9
	KAUNAS	5	1	12	-5	3	7.7	37.9	6.7
	MINSK	4	-1	12	-10	2	8.0	30.0	-1.9
	KAZAN	-5	-10	2	-21	-8	5.1	34.6	9.9
	MOSCOW	2	-3	8	-10	-1	7.8	33.3	-2.8
	SVERDLOVSK	-7	-16	1	-31	-11	1.6	21.6	1.6
	OMSK	-11	-18	0	-35	-15	2.8	22.9	11.4
	KUSTANAY	-10	-18	1	-32	-14	2.5	17.5	4.9
	KRASNOYARSK	-5	-12	10	-28	-9	7.0	18.9	6.3
	NOVOSIBIRSK	-9	-14	12	-32	-12	6.0	22.7	7.5
	BARNAUL	-9	-15	-1	-32	-12	3.5	20.2	-1.8
	KHABAROVSK	-8	-17	0	-25	-12	5.2	0.6	-10.1
	VLADIVOSTOK	-2	-8	4	-13	-5	5.5	4.3	-15.4
	KIEV	5	0	16	-5	3	7.2	51.8	7.4
	LVOV	6	-1	16	-8	3	6.2	16.7	-29.5
	KIROVOGRAD	5	-1	17	-11	2	6.7	25.7	-4.7

COUNTRY	CITY	TEMPERATURE (C)							PRECIPITATION (MM)		
February 1989		AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	TOTAL	DPART F/NRM
USSR	ODESSA	7	2	14	-5	4	5.6	11.6	-29.2
	YALTA	8	3	13	-2	6	1.7	73.8	13.9
	VORONEZH	1	-3	8	-11	-1	7.5	37.6	8.0
	SARATOV	-2	-6	3	-17	-4	7.4	18.4	-6.6
	KHARKOV	3	-1	14	-8	1	6.8	20.9	-13.7
	VOLGOGRAD	0	-4	4	-16	-2	6.4	23.6	-4.3
	ROSTOV	3	-2	17	-10	1	4.9	37.8	-27.4
	ASTRAKHAN	3	-3	10	-13	0	5.1	15.4	5.8
	KRASNODAR	8	0	23	-9	4	3.7	10.7	-43.8
	ORENBURG	-7	-14	2	-29	-11	3.2	16.5	-6.1
	TSELINOGRAD	-11	-18	-1	-32	-14	2.4	25.9	19.6
	KARAGANDA	-9	-17	-1	-30	-13	0.5	35.3	18.1
	TBILISI	8	-2	22	-8	3	-0.2	14.1	-8.9
	TASHKENT	4	-4	14	-13	0	-2.3	14.8	-36.6
	ASHKHABAD	8	-3	19	-8	3	-1.7	27.5	0.2
SYRIA	DAMASCUS	14	-1	26	-10	7	-1.6	10.3	-22.1
ISRAEL	JERUSALEM	12	3	24	-2	8	-2.5	48.5	-69.3
PAKIST	KARACHI	27	15	34	9	21	0.5	0.1	-8.5
INDIA	AMRITSAR	21	5	27	-1	13	-1.9	6.9	-14.9
	NEW DELHI	24	9	32	6	17	-0.6	3.7	-11.0
	AHMEDABAD	31	15	35	9	23	0.0	0.1	-0.9
	INDORE	30	12	35	6	21	0.3	0.1	-1.6
	CALCUTTA	29	16	34	11	23	-0.2	0.1	-11.8
	VERAVAL	30	15	38	10	22	0.0	0.1	-1.4
	BOMBAY	32	17	36	13	25	0.4	0.1	-0.8
	POONA	32	10	35	7	21	-1.6	0.1	0.1
	BEGAMPET	33	17	35	14	25	0.7	0.1	-4.8
	MADRAS	31	20	34	16	26	-0.4	0.1	-3.6
	MANGALORE	33	22	36	19	27	0.5	0.1	-1.9
H KONG	HONG KONG	19	15	25	9	17	1.1	2.6	-39.2
N KREA	PYONGYANG	5	-7	11	-17	-1	4.1	15.8	4.9
S KREA	SEOUL	7	-1	16	-8	3	4.8	33.5	12.4
JAPAN	SAPPORO	2	-5	6	-10	-2	2.5	32.5	-59.5
	NAGOYA	11	4	16	-1	8	3.2	161.2	99.7
	TOKYO	11	5	17	2	8	2.3	111.0	47.5
	YOKOHAMA	11	4	17	0	7	2.1	193.4	121.6
	KYOTO	10	4	19	0	7	3.2	177.8	112.3
	OSAKA	11	5	21	1	8	2.8	184.3	124.7
THAILN	PHETCHABUN	35	20	38	17	27	0.1	0.1	-20.8
	BANGKOK	32	24	34	22	28	0.4	1.0	-24.3
MALAYS	KUALA LUMPUR	32	23	33	21	27	0.8	220.2	63.0
VIETNM	HANOI	19	15	27	10	17	0.1	49.5	21.6
CHINA	HARBIN	-4	-18	2	-27	-11	4.7	2.3	-2.6
	HAMI	4	-12	10	-18	-4	1.0	0.1	0.1
	LANCHOW	4	-6	11	-11	-1	1.1	8.2	5.9
	BEIJING	7	-3	11	-8	2	4.0	0.1	-7.3
	TIENTSIN	7	-3	11	-6	2	3.8	0.1	-6.0
	LHASA	9	-5	16	-15	2	0.6	0.1	-3.3
	KUNMING	17	5	22	-1	11	1.3	1.8	-9.5
	CHENGCHOW	7	-2	16	-6	3	0.5	26.4	13.9
	YEHCHANG	8	3	18	-1	5	-1.1	70.7	42.6
	HANKOW	8	2	16	-2	5	0.3	117.3	58.1
	CHIHKIANG	7	2	15	-1	5	-1.6	63.5	14.8
	SHANGHAI	9	3	16	-3	6	1.5	89.3	26.6
	NANCHANG	9	4	19	-1	6	0.0	157.2	62.0
	TAIPEI	20	15	30	9	17	2.2	42.7	-93.2
	CANTON	20	12	27	5	16	1.9	4.3	-49.6
	NANNING	17	10	28	5	14	0.1	25.4	-11.1
CNRY I	LAS PALMAS	21	15	23	12	18	0.7	96.1	74.1
MOROCC	CASABLANCA	18	9	22	5	14	0.2	36.1	-24.2
	MARRAKECH	19	9	26	5	14	1.0	23.3	-12.5
ALGERI	ALGER	18	7	24	2	13	1.2	24.8	-62.7
	BATNA	13	2	21	-5	7	1.3	14.2	-15.8
TUNISI	TUNIS	17	6	22	0	12	-0.1	44.3	-13.3
NIGER	NIAMEY	33	18	40	15	26	-1.8	0.1	0.1
MALI	TIMBUKTU	31	16	34	13	23	-1.1	0.1	0.1
	BAMAKO	34	21	38	18	27	-0.4	0.1	0.1
MAURIT	NOUAKCHOTT	30	18	36	13	24	1.3	2.5	0.6
SENEGL	DAKAR	24	19	33	17	22	0.9	0.1	-1.2
CHAG A	DIEGO GARCIA	29	25	30	23	27	-0.6	391.3	110.3
LIBYA	TRIPOLI	18	7	27	4	13	-0.6	12.6	-24.9
	BENGHAZI	17	9	25	6	13	-0.7	21.4	-13.6
EGYPT	CAIRO	19	9	32	5	14	-1.3	1.3	-2.6
	ASWAN	21	9	31	6	15	-3.2	0.1	0.1
ETHIOP	ADDIS ABABA	23	8	25	5	16	-1.8	66.4	29.6
KENYA	NAIROBI	27	12	29	7	19	-1.1	34.3	-10.6

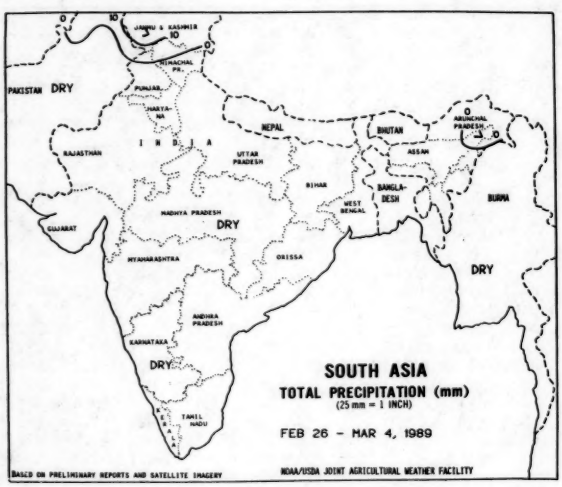
COUNTRY	CITY	TEMPERATURE (C)							PRECIPITATION (MM)		
February 1989		AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	TOTAL	DPART F/NRM
TANZAN	DAR ES SALAAM	32	24	33	17	28	0.0	0.1	-69.0
GABON	LIBREVILLE	30	24	38	21	27	0.1	305.6	33.7
TOGO	LOME	33	24	35	21	29	0.8	0.1	-32.2
B FASO	OUAGADOUGOU	34	18	39	15	26	-2.0	0.1	-1.8
IVRY C	ABIDJAN	33	26	34	23	29	2.0	0.1	-58.8
MOZAMB	MAPUTO	30	22	34	20	26	0.4	179.4	39.4
ZAMBIA	KABWE	23	18	24	17	21	-0.2	190.0	-16.1
ZIMBAB	HARARE	23	17	27	15	20	-0.1	247.4	89.7
S AFRI	PRETORIA	26	17	33	16	22	0.2	199.5	113.8
	KROONSTAD	25	15	32	11	20	-2.1	156.8	148.5
	JOHANNESBURG	22	14	29	12	18	-0.6	171.8	75.4
	BETHAL	22	13	29	9	18	-1.5	91.8	82.4
	DURBAN	27	22	31	19	24	0.3	254.5	145.1
	CAPE TOWN	27	16	35	12	22	1.5	9.6	-7.2
CANADA	TORONTO	-2	-11	10	-18	-6	-0.5	19.4	-26.5
	MONTREAL	-4	-13	6	-22	-9	0.1	31.0	-34.3
	WINNIPEG	-13	-24	0	-36	-19	-3.2	5.7	-11.7
	REGINA	-13	-24	2	-40	-18	-5.0	8.1	-8.0
	SASKATOON	-12	-24	1	-39	-18	-3.4	6.0	-9.9
	LETHBRIDGE	-7	-19	6	-35	-13	-7.7	21.8	2.8
	CALGARY	-7	-18	7	-36	-12	-5.1	12.3	-3.2
	EDMONTON	-9	-19	4	-37	-14	-4.5	10.9	-8.0
	VANCOUVER	5	-3	11	-11	1	-3.7	85.5	-29.2
MEXICO	GUADALAJARA	27	8	31	2	17	0.6	1.1	-5.7
	MEXICO CITY	23	7	27	2	15	1.4	0.1	-6.0
	ACAPULCO	32	21	36	19	27	0.2	0.1	0.1
BERMUD	ST. GEORGES	23	18	25	14	20	2.8	56.6	-50.8
BAHAMA	NASSAU	26	18	29	8	22	1.5	0.6	-40.7
CUBA	HAVANA	27	20	32	13	23	1.4	26.5	-25.8
JAMAIC	KINGSTON	31	22	34	20	26	0.7	9.2	-11.1
P RICO	SAN JUAN	28	22	29	19	25	-0.1	35.9	-19.1
GUADEL	RAIZET	29	21	29	19	25	1.0	15.9	-32.8
MARTNQ	LAMENTIN	28	22	29	19	25	1.3	65.3	-22.6
BARBAD	BRIDGETOWN	28	23	29	20	26	0.0	20.0	-27.8
TRINID	PORT OF SPAIN	30	21	32	17	26	1.0	24.3	-23.4
COLOMB	BOGOTA	18	7	21	2	13	-0.2	27.8	-10.0
VENEZU	CARACAS	28	21	29	19	24	-0.1	8.4	-21.3
F GUIA	CAYENNE	28	23	31	22	26	0.4	453.6	86.0
BRAZIL	FORTALEZA	29	24	31	23	27	-0.7	58.1	-166.7
	RECIFE	30	23	30	21	27	-0.4	34.3	-72.3
	BELO HORIZONTE	30	20	33	18	25	2.3	251.0	34.6
	CAMPO GRANDE	29	21	32	19	25	0.5	215.5	16.6
	FRANCA	27	17	29	15	22	0.5	255.6	35.6
	RIO DE JANEIRO	30	24	35	21	27	0.6	82.6	-68.5
	LONDRINA	28	20	32	18	24	0.1	161.5	-36.6
	SANTA MARIA	31	19	36	14	25	0.9	9.1	-131.9
PERU	LIMA	29	21	31	18	25	2.3	0.8	0.8
BOLIVI	LA PAZ	14	3	28	1	8	-0.4	97.4	-6.8
CHILE	SANTIAGO	31	13	34	10	22	1.9	0.1	0.1
ARGENT	IGUAZU	31	20	34	17	26	***	146.1	****
	FORMOSA	33	22	37	17	27	0.4	134.6	-1.4
	CERES	34	20	39	15	27	1.7	77.9	-26.1
	CORDOBA	31	18	36	14	25	2.4	80.2	-30.4
	RIO CUARTO	32	19	38	13	25	3.3	28.0	-57.8
	ROSARIO	32	19	38	11	25	2.4	20.2	-87.9
	BUENOS AIRES	31	18	37	8	24	2.2	82.1	-15.6
	SANTA ROSA	33	17	40	10	25	2.8	26.4	-45.7
	TRES ARROYOS	29	15	36	6	22	0.8	83.7	20.2
MIDW I	MIDWAY ISLAND	21	16	24	12	19	0.1	114.8	4.2
N CALD	NOUMEA	28	24	32	22	26	0.1	133.9	26.0
FIJI	NAUSORI	30	24	32	21	27	0.3	197.0	-133.7
SAMOA	PAGO PAGO	30	24	31	23	27	-0.1	369.1	47.1
TAHITI	PAPEETE	31	23	33	22	27	0.1	182.7	-42.5
N ZEAL	AUCKLAND	24	16	26	12	20	-0.1	57.5	-35.1
	WELLINGTON	19	13	24	7	16	-0.3	50.8	-22.4
PA N G	PORT MORESBY	30	23	33	16	27	-0.8	133.1	-73.9
AUSTRL	DARWIN	32	25	33	22	29	0.7	140.0	-222.2
	MOREE	32	19	35	14	25	-0.7	33.2	-36.4
	BRISBANE	26	20	28	17	23	-2.0	128.5	-47.0
	PERTH	31	18	43	13	24	-0.4	28.4	13.9
	CEDUNA	28	16	43	12	22	0.4	0.1	-13.5
	ADELAIDE	28	16	38	12	22	0.3	2.2	-43.3
	MELBOURNE	26	15	37	10	20	0.1	25.2	-29.7
	WAGGA	30	17	34	9	23	-0.2	21.4	-13.7
	CANBERRA	26	13	30	8	19	-0.4	4.3	-51.7
PHILIP	MANILA	30	21	33	17	26	-0.4	33.3	28.7



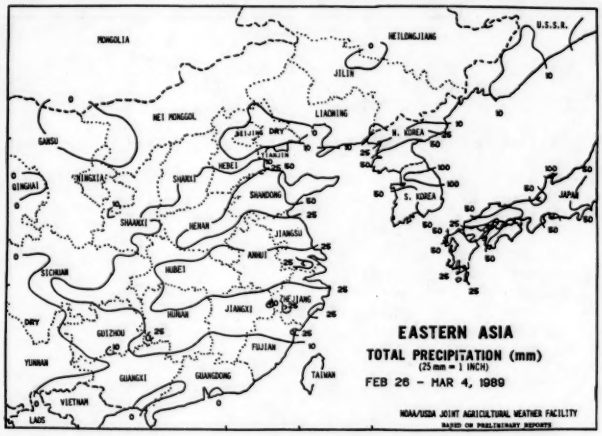
WESTERN USSR ... Widespread significant precipitation accompanied continued unseasonably warm weather over most of the region. Greatest amounts of precipitation (25-50mm) fell mostly as rain over the central Ukraine, eastern Belorussia, the western portion of the Central Region, and the eastern Black Soils Region. Precipitation amounts over the remainder of the region generally ranged from 10 to 25mm. The eleventh consecutive week of unseasonably warm weather covered most winter grain areas, with temperatures further increasing this week. Weekly average temperatures were around 9 degrees Celsius (C) above normal, with highest weekly temperatures ranging from 10 to 20 degrees C in the south and west, and 5 to 7 degrees C in the north and east. The weather was warm enough in the southern Ukraine and the North Caucasus to cause winter grains to enter a state of semidormancy, with greening possible in some areas. Usually, winter grains begin to break dormancy in these areas in late March.



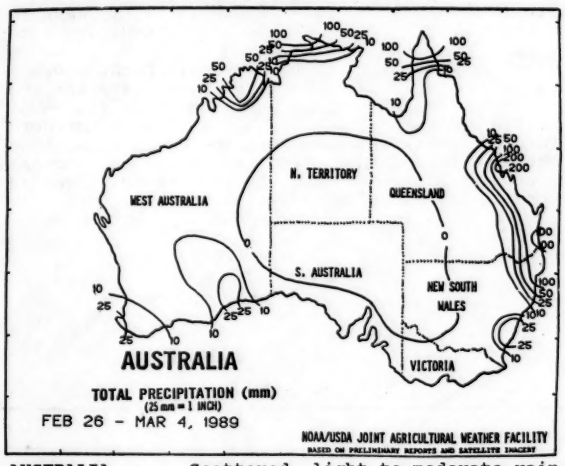
EUROPE ... A strong frontal system brought moderate to heavy rain (15-40mm, with isolated rainfall in excess of 50mm) across much of southern Europe early in the week. The rainfall was the first substantial precipitation in sections of the Balkans since early December. Very heavy rain (100-189mm) may have caused localized flooding in southwestern Yugoslavia. Rainfall over the last 2-3 weeks in southern Europe has greatly improved soil moisture for newly vegetative winter grains. However, further timely rainfall over the next few months will be necessary to maintain yield potential due to below-normal winter precipitation and resultant low subsoil moisture. In the north, moderate to heavy rain (15-40mm, with scattered amounts greater than 40mm) continued for the third consecutive week across the northwest, while light to moderate rain and snow (5-20mm) covered the northeast. Temperatures ranged from near normal to above normal in most crop areas.



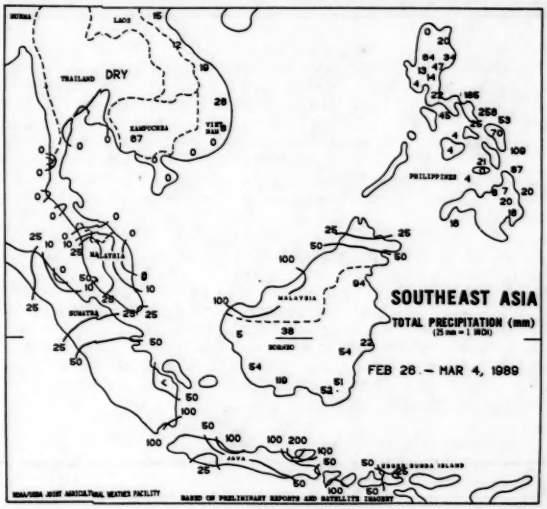
SOUTH ASIA ... Dry, seasonably warm weather spread across wheat regions of Pakistan and northern India. Hot weather, however, pushed into the southern and eastern wheat regions, with high temperatures exceeding 35 degrees C from Maharashtra to easternmost Uttar Pradesh, increasing crop moisture usage and evaporative losses. Winter wheat was mostly filling to maturing across South Asia but experienced delays in development due to cooler-than-normal weather earlier in the season. Dry, periodically hot weather covered jointing to heading rice along India's southern coast.



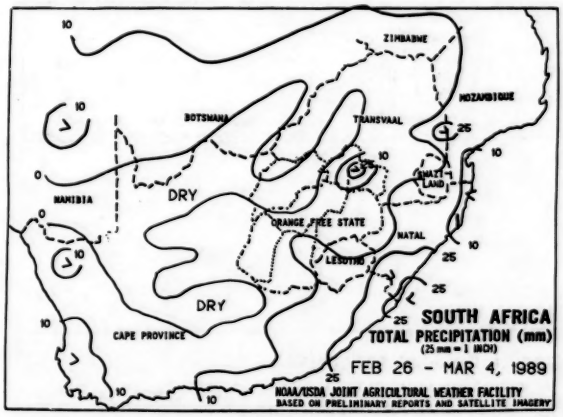
EASTERN ASIA ... Heavy rain and snow (25-65mm) fell across sections of Shandong, Henan, Anhui, and Jiangsu, helping to alleviate dryness for winter crops. The rainfall was the most significant precipitation in central sections of the North China Plain since early last fall. Scattered rainfall (5-60mm) also continued across most of the Yangtze Valley. In southern China, mostly dry weather continued to favor progress in early rice planting. Heavy rain and snow (25-75mm) fell over much of the Korean Peninsula and Japan, saturating most soils. Very heavy rain (100-198mm) in scattered sections of South Korea and Japan likely caused localized flooding. Mean temperatures ranged from below normal in central and western crop areas to above normal elsewhere.



AUSTRALIA ... Scattered light to moderate rain (5-18mm) benefited filling summer crops across southeastern Queensland, while summer crop areas in northern New South Wales remained dry. Heavy seasonal rain (25-100mm, with scattered amounts in excess of 100mm) continued to favor vegetative sugarcane along coastal eastern Queensland, although some isolated rainfall in excess of 150mm may have caused isolated flooding. In the south, mostly dry weather covered crop lands in southern New South Wales, Victoria, and South Australia, while scattered showers (5-30mm) continued in Western Australia. Mean temperatures ranged from much above normal in southeastern crop areas to near normal to below normal elsewhere.



SOUTHEAST ASIA ... Locally heavy rain (100-200mm or more) continued over northern Java and parts of eastern Malaysia, as moderate to heavy showers (25-50mm or more) fell elsewhere over the region, maintaining favorable irrigation levels for rice development. Dry weather returned to the east coast of western Malaysia and extended northward into peninsular Thailand. Scattered, light rain (1-13mm) fell south of Bangkok, while dry, hot weather continued over secondary rice areas north of Bangkok. In the Philippines, heavy showers (50-100mm or more) continued over locally flooded regions from southern Luzon to northeastern Mindanao. Light to moderate rain fell elsewhere, including grain regions of northern Luzon.



SOUTH AFRICA ... Much needed, drier weather occurred over primary corn regions of the Maize Triangle, helping dry excessively wet fields. Light to moderate rain (9-19mm) returned to southern areas but elsewhere, little or no rain fell over most of the Triangle. Temperatures averaged 1-3 degrees C below normal with highs ranging from 28 to 30 degrees C. Moderate showers (10-25mm or more) fell throughout crop regions of the Cape Province and Natal as temperatures averaged near normal. South African corn is mostly in the filling stage of development, necessitating warm, drier weather for maturation.

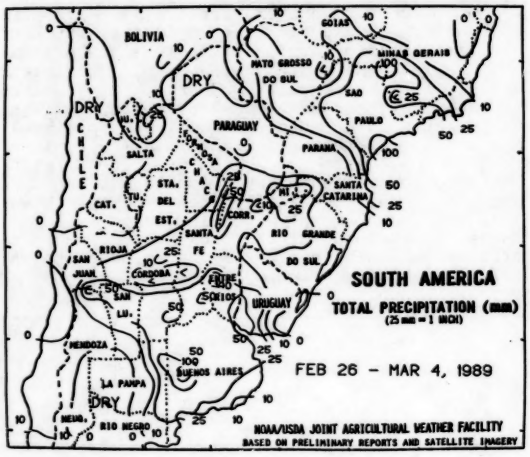
The Weekly Weather and Crop Bulletin (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the Weekly Weather Chronicle. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53d Congress, 3d Session. NOAA is responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

Annual subscriptions: domestic $35, foreign $50 (in U.S. funds by international money order or check drawn on U.S. bank) payable to U.S. Department of Commerce, NOAA. POSTMASTER: Send address changes to Weekly Weather and Crop Bulletin, NOAA/USDA, Joint Agricultural Weather Facility, USDA South Building, Room 5844, Washington, D.C. 20250. Order subscriptions from the office and address listed above. Second class postage paid at Washington, D.C. and additional mailing offices.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Analysis Center
Managing Editor . . . . . Douglas Le Comte
Meteorologists . . . . . Tom Heddinghaus
Vilhelm Bjerknes, Bob Stefanski, Wes Byrd, and Eyad Atallah

Subscriptions (202) 447-7917 . . Jeanette Hill

U.S. DEPARTMENT OF AGRICULTURE
Economics Management Staff
Editor . . . . . Sharon Lee
National Agricultural Statistics Service
Agricultural Statistician . . . Tom Kurtz
World Agricultural Outlook Board
Agricultural Weather Analysts. . Ray Motha,
Tom Puterbaugh, Mark Brusberg, and Jeff Andresen



SOUTH AMERICA ... In Argentina, significant rain (25-54mm) fell over the major growing areas of southern Cordoba, southern Santa Fe, and Buenos Aires. Locally heavier rain (75-100mm or more) fell in southwestern Buenos Aires and east-central La Pampa. Topsoil conditions continue to improve following the break in the prolonged summer drought. While conditions have stabilized, summer crops reaching the final stages of development and maturity will benefit little from the late rains. However, the recent moisture will help grain and pod filling of later maturing crops. Showers fell in eastern cotton areas of Chaco and spread eastward into Brazil's western Rio Grande do Sul, where 15-47mm helped immature soybeans. Light showers (1-10mm) fell over western Santa Catarina and southern Parana, while heavier rain (25-56mm) continued to provide ample moisture in northern Parana, southern Mato Grosso do Sul, and Sao Paulo. Dry weather prevailed in all but extreme southern Minas Gerais. Drier weather is needed for Brazil's soybean harvest.

NOAA/USDA Joint Agricultural Weather Facility
Room 5844 USDA South Building
Washington, D.C. 20250

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

WEEKLY NEWS BULLETIN
SECOND CLASS

SECOND CLASS MAIL
POSTAGE AND FEES PAID
NOAA PERMIT NO.

ISSN 0043 1974